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MAR. 31
1952

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R. V. Carleton Heads Braniff Operations

(See page 4)

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Trends

Stretchout in aircraft production is causing plenty of bewilderment. Aircraft Production Board officials are being queried about further cutbacks in engine production even though no new cutbacks are being planned—for the moment, at least.

•

Another major airline will shortly order Douglas DC-7's. American and National have already contracted for the plane, powered by Wright's compound engine.

•

Air Force wants substantially increased quantities of aviation gasoline in April, and Petroleum Administration for Defense is pushing refiners to step up production. Airlines may get less avgas if production isn't increased.

•

Wage Stabilization Board's recommendation of union shop in the steel case will cause the two major aviation unions, UAW-CIO and IAM-AFL, to redouble efforts to obtain such agreements in contracts where they don't already exist. The unions were successful in winning several union shops from aircraft builders this year, but only two airlines signed such agreements.

•

At least one of the largest airlines favors a tapered fare structure as a permanent industry policy. Such a fare structure charges more per mile for short-haul transportation than for long-haul in view of higher cost of performing short-haul. Proposed $1 fare increase is a step in this direction.

•

Merger of Braniff and Mid-Continent may be quickest merger proceeding and one of the fastest major economic cases in CAB history. There's no opposition to the deal, and it may be approved by June or July.

•

CAA is preparing a special bulletin to its regional offices, covering recommendations on use of preferential runways. Use of such runways is being suggested to combat complaints about low-flying aircraft by insuring that all possible flights operate over non-congested areas. CAA's plan is said to recommend use of preferential runways only where absolutely necessary.

•

Civil aviation industry's most recent attempt to prevent proposed change from statute to nautical miles in all flying activities has been rejected by Air Coordinating Committee. July 1 deadline may be extended, however, because of CAA's inability to make the change by then.

The Washington View

Cuts Threaten Atom Program

Has production of an atom-powered bomber been delayed by recent House action in cutting funds for the Atomic Energy Commission for fiscal 1953?

After the House Appropriations Committee recommended the slash, nine House members of the Joint Congressional Committee on Atomic Energy warned their colleagues that the cut would not only jeopardize the physical safeguarding of the A-bomb stockpile, "starve" the program for an atomic submarine, and slow down the atomic bomber, but would also hamper research from which "all else" flows. House members ignored the warnings and let the cut stand when they voted on the measure.

Of course this money bill will in no way effect scheduled output of two atomic bombers which have already been ordered by the USAF. Consolidated Vultee is going ahead with an airframe for the General Electric atomic power plant and Boeing will continue its program for a fuselage for Pratt & Whitney's atomic engine.

Vandenberg Bans Feuding

Any possible recurrence of the 1949 feud between the Navy and Air Force will be eliminated if USAF Chief of Staff Hoyt S. Vandenberg has his way. He has put out a directive warning all top officers in his branch of service against commenting on the other services.

Vandenberg's action was taken after newspaper columnists started comparisons between Navy and USAF jet engines and concluded the Navy was buying inferior power plants. The general, apparently fearing the tips for the articles might have come from Air Force officials, clamped on the lid, stating any differences would be ironed out by him in meetings with the Joint Chiefs of Staff.

PAD Holds Firm on Leaded Gas

Petroleum Administration for Defense apparently has no intention of being stampeded by Congressional groups or any other organizations into an early lifting of its PAD Order No. 4, requiring a minimum of 4 cubic centimeters of tetraethyl lead in every gallon of domestically-used aviation gasoline.

Despite protests by CAA, CAB, Pratt & Whitney, the Air Transport Association and various airlines, as well as a letter from Rep. Lindley Beckworth (D., Texas), chairman of the House Commerce sub-committee investigating air safety, to Interior Secretary Chapman calling for a revocation of the order, no action has been taken by PAD. And Deputy PAD Administrator Bruce K. Brown told the Beckworth group that his agency does not plan to lift the order until the supply situation eases.

Beckworth's letter alleged that the shortage of aviation gasoline anticipated last October (when the order was issued) had never materialized, that an adequate supply of aviation gas should exist today, and that the PAD order has caused greater hazards to aviation safety.

About the same time that Brown was, in effect, advising the House sub-committee to stop trying to tell PAD how to run its business, he also appealed to refiners of aircraft fuel to try to step up production even more, mainly because the Air Force had increased its requirements for April.

Philosophically Peaking

Most of the explanations by defense officials on the stretchout of defense production or other subjects are usually clear enough, even though the logic behind the decision is often somewhat hazy. But one high-level spokesman recently came up with a statement that left Washington reporters completely bewildered. He said:

"We are peaking our program philosophically but it is naive to assume the allotment program is an equity program unless the allotments are so abysmally low that they permit the agency to relax and allow market determination at percentage of base period, sidetracking military return with adjustments."

The same official elaborated by declaring, "This is based on use levels proportionately and is in the market test sense. We now have a quantitative framework with marginal qualitative reallocations to formalize the procedure for the further refining and implementing of our objectives."

Tax Write-Offs Near 200

A total of 203 commercial transports ordered or delivered after the Korean War started have now been approved for amortization over five years by the Defense Production Administration after recommendation by the Defense Air Transportation Administration.

DPA's decision to authorize five-year tax write-offs was made in mid-January because the transports add to the nation's air lift potential in case of emergency. Before this program was adopted, the airlines wrote off the cost of new equipment in seven years.

First to benefit from the program was American Airlines, which received an okay covering five Convair 240's. Next came Trans World Airlines (36 Lockheed Constellations and 40 Martin 4-0-4's) and National Airlines (4 Douglas DC-6's). Delta Air Lines followed with certificates of necessity for 10 Convair 340's and one Douglas DC-6. Latest to join the ever-expanding list is Eastern Air Lines (30 Constellations and 60 4-0-4's) and American again (17 DC-6B's).

. . . Robert M. Loebelson

Now the Boeing KC-97A Flying Tanker

Lowers the Boom on Icing Problems

ICEGUARD PROTECTION on ruddevator surfaces controlling refueling boom. Smaller picture shows KC-97A in flight refueling of B-50.

PLANE-TO-PLANE refueling in flight is a delicate operation, particularly the guiding of the flying boom on the tanker to the inlet on the second ship. It's accomplished with "ruddevators"—combination rudder-elevators at the end of the boom. Because the slightest amount of ice on these guiding surfaces would cause trouble, current production of the ruddevators on Boeing's KC-97A relies on Goodyear's Iceguard to prevent ice formation.

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Cover Photo

R. V. CARLETON, veteran pilot and Braniff International Airways' second oldest employe in point of service, has been named to the newly-created position of operations manager of the company, in charge of all operations and maintenance for both the domestic and international divisions.

Carleton became a Braniff pilot in 1931, during his career directed all preparations for inauguration of the company's Latin American service, secured CAA approval for Braniff as the first airline to use the instrument landing system, and piloted to major Braniff cities the first DC-2, first DC-3, first DC-4, and first DC-6. He now has 15,000 flying hours. In 1947, he became director of flight operations, a position which he held until his recent appointment. Two years ago he was named by AMERICAN AVIATION as one of the nation's 10 outstanding airmen for his flight test program at La Paz, Bolivia, that resulted in first CAA approval in the history of commercial aviation for use of jet assisted take-off equipment.

Ray C. Shrader, Braniff's vice president-operations, is on indefinite leave of absence due to illness, and Carleton takes over all operations and maintenance duties. Shrader, upon his return, will assume corporate responsibilities as a vice president and director of the airline.

other publications

American Aviation Daily (including International Aviation): Published daily except Saturdays, Sundays and holidays. Subscriptions: $18 one month; $200 one year. Daniel S. Wentz II, managing editor.

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Official Airline Guide: Monthly publication of airline schedules and fares. Subscriptions: U. S. A. and countries belonging to the Pan American Postal Union, including Spain and the Philippines, $9.00 one year. Canada, $9.50. All other countries, $11.00. Published from editorial offices at 139 North Clark St., Chicago 2, Ill. Central 6-5804. C. N. Johnson, managing editor.

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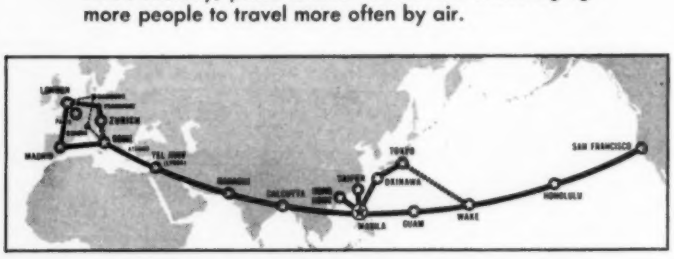

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When & Where

Mar. 30-Apr. 3—American Association of Airport Executives, Annual Convention, Fort Worth, Texas.

Apr. 4-5—National Aviation Education Council, Copley Plaza Hotel, Boston.

Apr. 21-24—Society of Automotive Engineers, Aeronautic, Aircraft Engineering Display & Technical Air Review, Statler Hotel, New York.

Apr. 22-23—Air Traffic Conference, semi-annual meeting, Atlanta, Ga.

May 8-9—Fifth Annual Wisconsin Aeronautics Conference, Green Bay, Wisconsin.

May 12-14—Institute of Radio Engineers, National Conference on Airborne Electronics, Dayton Biltmore Hotel, Dayton, Ohio.

May 14-16—Society for Experimental Stress Analysis, Spring Meeting, Lincoln Hotel, Indianapolis, Ind.

May 15-16—American Helicopter Society, 8th Annual Forum, Washington Hotel, Washington, D. C.

May 15-16—Southeastern Airport Managers' Assn., semi-annual meeting, Jacksonville, Fla.

May 17-18—National Pilots Air Meet and Races, Chattanooga, Tenn.

May 22-24—American Society for Quality Control, Sixth Annual Convention, Syracuse, N. Y.

June 1-6—Society of Automotive Engineers, Summer Meeting, Ambassador and Ritz-Carlton Hotels, Atlantic City, N. J.

International

Apr. 1—IATA Insurance Sub-Committee, New York.

Apr. 15-18—International Federation of Air Line Pilots Assns., annual convention, Sydney, Australia.

Apr. 28—IATA Warsaw Convention Special Committee, Bermuda.

Apr. 30—IATA Legal Committee, Bermuda.

May 5—IATA, Fifth Annual Technical Conference, Copenhagen, Denmark.

May 11—IATA Traffic Committee, 15th Meeting, Buenos Aires.

May 12—IATA Clearing House & Revenue Accounting Sub-Committee, Rome.

May 19—IATA, Technical Committee, Thirteenth Meeting, Copenhagen, Denmark.

May 27—ICAO, Sixth General Session, Montreal.

Letters

Letters should be addressed to The Editor, American Aviation Magazine, 1025 Vermont Ave., N.W., Washington 5, D. C. Anonymous letters will not be printed, but names will be withheld upon request.

Not Like Eggs

To the Editor:

For seven years the air-traveling public has been handled at Los Angeles Airport, now Los Angeles International Airport, through two temporary buildings and a half of another building. One building is occupied by TWA and United and one by American, Western and PAA. In another building Southwest occupies a small space.

In recent years each airline has rearranged the furniture and bought new trimmings like a housewife at spring cleaning time, trying to find more space for the increasing family. They all look forward, of course, to that bright day some time in the future when the city will provide a new terminal building. A separate cargo building has already been provided by the airport to relieve congestion in the passenger terminals.

I wonder if it has occurred to the management of these airlines that perhaps more efficient use of these two buildings could be made by using one for an incoming terminal and one for an outgoing terminal for all six airlines.

It's too bad there isn't someone to sentence one member of each airline management to go and spend a 12-hour period in one of our big railway terminals where many passengers are handled with a minimum of confusion. The advent of coach service is gradually weaning the air-traveling public away from the feeling that it has to be handled like "eggs" and they like it.

It will be a wonderful day when our airlines learn to "pull together" instead of "pulling apart."

AN AIRLINE EMPLOYE

Reading Time

To the Editor:

Referring to your announcement advising that effective with the March 3 issue, your aviation publication will be received bi-weekly.

I sincerely believe that this is a move in the right direction, because it gives one more opportunity to digest the good reading in your publication.

It is needless to say that if one is endeavoring to keep abreast with all of the editorials that are published today, it takes a considerable amount of time for reading, which sometimes means that good editorials are by-passed on account of limited spare time available for this purpose.

A. L. HUBER
Asst. to President
Pressed Steel Car Company
Washington, D. C.

All Weather

To The Editor:

The article by William D. Perreault on "What is Needed for All-Weather Flying" in the February 18 issue takes some of the "hokum" out of this "all weather" business. I enjoyed it very much.

CHARLES H. DOLSON
Vice President—Operations
Delta Air Lines
Atlanta, Ga.

Hum Dinger

To The Editor:

Your March 3 editorial on "Newark Airport" is a "hum dinger." You are absolutely right in your thinking.

CLIFFORD T. UNBEKANT
District Sales Manager
Colonial Airlines
Philadelphia, Pa.

Wrong Emphasis

To The Editor:

Your editorial "Danger Ahead" in the March 17 issue of AMERICAN AVIATION touched on only two categories of airline revenues. These categories are easily defined from the terms employed by you and the emphasis laid, denoted by the number of times the terms are repeated. For example: seat miles, seats, seat capacity, seating basis, seat miles, seat miles, load factors, high load factors, load factors, seat miles, higher fares, higher fares, air travel, mail pay, cut-fares, coach fares, fare increases, discounts, round-trip discount, other discounts, basic fares, air fares, seats filled, mail pay increases, high load factors and load factors.

The fact that not once did you allude to air cargo revenue possibilities in your otherwise splendid editorial, no doubt reflects the attitude in the domestic scheduled airline industry toward air cargo.

Could be one of the reasons why warning signals are being hoisted. The entire emphasis seems to be on the development of passenger traffic.

Why in the world isn't it also: air cargo, cargo capacity, payload factors, ton-mile return, cargo rate-breaks, commodity rates and so on?

CHARLES L. GALLO
President
Air Express International Agency, Inc.
New York

Much Improved

To the Editor:

My best thanks for your much improved AMERICAN AVIATION. To me it is the best medium in all the aviation field.

I. J. PERELLI
Manager, Travel Department
Security Trust Company
Wheeling, W. Va.

To The Editor:

Remiss, indeed, would I be if I didn't comment on the improvements you have given AMERICAN AVIATION. I have just seen your March 17 issue. Your editorial material is timely, factual, and interesting.

AUBREY KEIF,
Manager-Aviation Sales
The Texas Company

To The Editor:

I just wanted to congratulate you on the March 3 issue of AMERICAN AVIATION—the "new milestone in the history of this magazine."

It looks good and I think that you are, as always, doing a good job.

SCOTT HERSHEY,
Washington, D. C.

Plaudits

To The Editor:

Unaccustomed as I am to writing "Letters to the Editor" missives, I feel that in this case I must break my silence.

I want to congratulate you on the series you have been running concerning the position of the industry and the college graduate. Certainly this is a problem we are all familiar with and in your usual fine style and fairness, you have brought the subject into focus where now perhaps something concrete will be done.

As a college professor and as president of the University Aviation Association, I know I speak for all of us when I say that there is much to be said on both sides of this discussion, and we hope that future articles will continue to bring additional facts to light.

Best wishes to you and your fine staff for giving us one of the finer aviation publications.

GENE KROPF
Assistant to the Dean
Parks College of Aeronautical Technology
East St. Louis, Ill.

High Cost of Operation

To The Editor:

I think your editorial in the March 17 issue of AMERICAN AVIATION is excellent. Since returning to the United States from Manila, I have been absolutely amazed at the spiraling cost of operations. To a certain extent a similar trend has been experienced in the Philippines, but certainly not to the extent that costs are increasing back here.

I think the first three items on Page 1 of the newsletter in the same issue under "Trends" are particularly appropriate. The CAB is obviously being very inconsistent. Once again, I think we have proof of the attempt to establish airline fares without reference to accurate up-to-date cost figures.

E. T. BOLTON
Vice President
Philippine Air Lines, Inc.

Editorial

How to Get Rich

A FORMER newspaperman in Washington by the name of Blair Bolles has written himself a book with the promising title of "How to Get Rich in Washington." (W. W. Norton & Co., $3.75). Living in the national capital as we do and being only too well aware that a lot of people with the right connections have been getting rich around the place, we bought the book with eager anticipation.

by W. W. P.

We weren't disappointed in the opening chapters. Mr. Bolles has done a reasonably good, if unimaginative, job from newspaper clippings and Congressional reports of summarizing his thesis on how easy money is made in Washington—gifts, protection, "the right friends," tax evasions, surplus sales, and all the rest.

But we came near falling out of our chair when we found that Mr. Bolles had written himself a chapter on "Privilege in the Sky" and lumped the certificated scheduled airlines and the Civil Aeronautics Board into a general conspiracy against the common good.

Sure enough, the airlines and the CAB are thrown right into the same basket with all of the numerous scandals now being revealed. Enrichment, immorality, stealing, and all the rest. Mr. Bolles calls the CAB one of the "bonanza lodes" of Washington.

The tens of thousands of stockholders who have benefitted sparsely from their investments in the forty-five certificated carriers, and the 100,000 employees of the airline industry, are in for a surprise by reading what Mr. Bolles has to say. He insinuates, he implies, he infers—but after five careful readings of the chapter we failed to find a single fact from Mr. Bolles to support his thesis that the CAB and the scheduled airlines are part of the Washington scandal scene.

Mr. Bolles either fell into a trap or was led into one. For nine preceding chapters he tells how easy and quick money has been made through the "right connections"—tanker sales, grain stealing, tax evasions, RFC loans, surplus plants and equipment, etc. But in the tenth chapter on "Privilege in the Sky" he reverses himself completely by putting the onus on an established industry that operates in the fish bowl of public regulation, and voices praise for those who picked up government surplus planes at a few cents on the dollar and rolled small investments into fortunes by non-scheduled operations which violated every concept of public carrier regulation.

He tells the old wheeze again. It is certainly true that many bona fide veterans picked up surplus transport equipment and tried to make new business enterprises for themselves. But this was back in 1946. Mr. Bolles carefully avoids mentioning that the non-skeds today are for the most part sharp operations by sharp operators who have little, if any, connection or resemblance to the well-intentioned vets of 1946.

Mr. Bolles berates fast deals for nine chapters and in the tenth he goes into reverse to approve the very things he has just finished damning. He condemns as immoral an established industry in which the public has invested its money and which is regulated from top to bottom, but has only weeping for the very type of operations which he assails so enthusiastically in the remainder of the book.

This is either intellectual dishonesty or a carefully calculated planting of an insidious libel (with an objective of socialized nationalization?) or is just plain careless reporting by a man who didn't take the time or didn't want to become informed on what he was driving at.

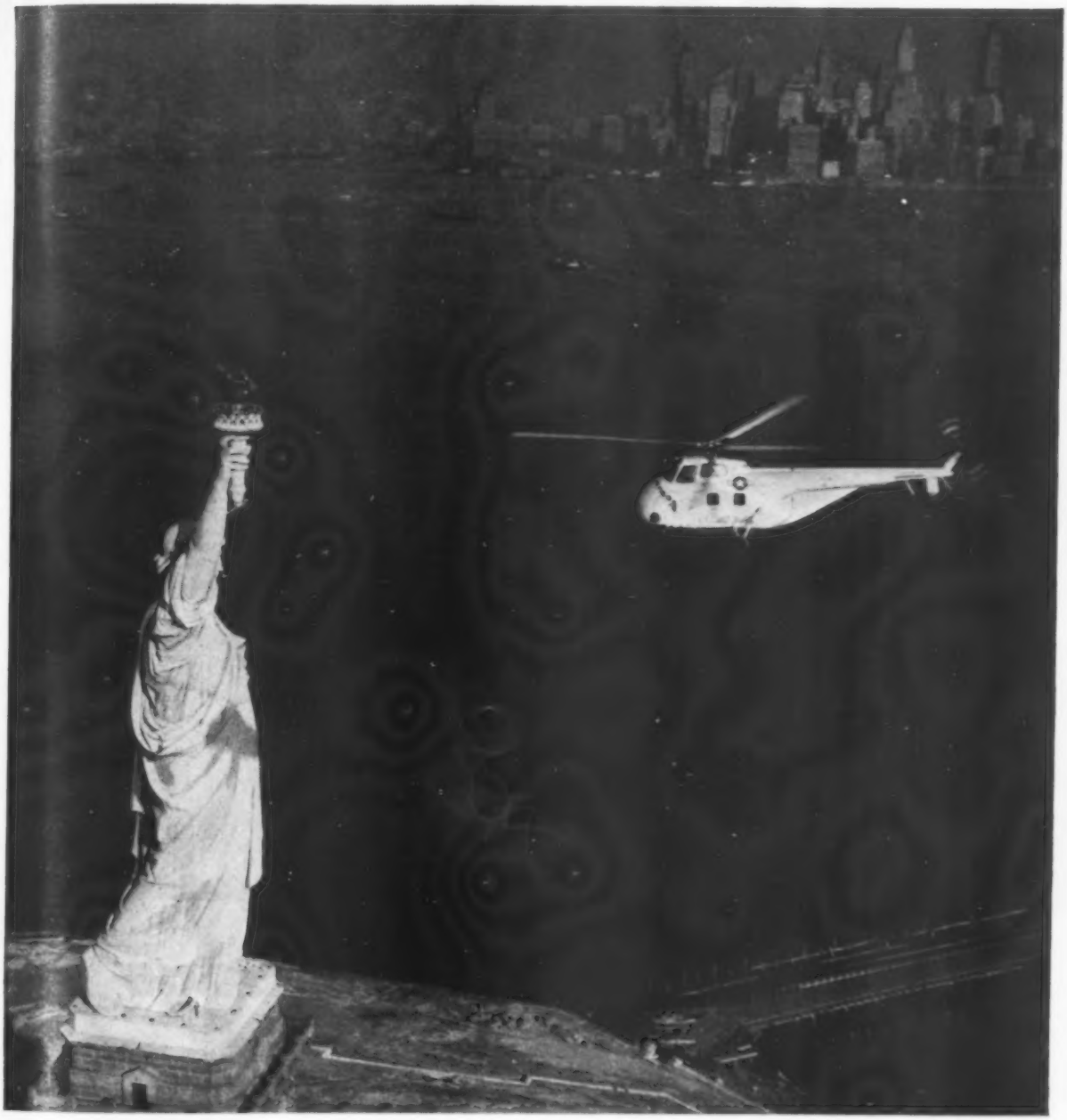
If Mr. Bolles had wanted to dig a little bit he could have uncovered a few past and present activities in the air transport field which might fit in a general way into the pattern of his book. But it is significant, perhaps, that not once did he allude to a single one of the few unsavory things that might be found in this industry and which normally can be found in any field of human endeavor.

What Mr. Bolles wants his readers to believe is that there is something shockingly wrong about the CAB and the certificated scheduled airlines. They have conspired to milk the public. They have been shamefully inefficient against the public good. They have captured and retained the sky for themselves. Favoritism and privilege are rampant. But Mr. Bolles leaves the subject right there. He displays not the slightest evidence of even the most elementary knowledge of the industry, its growth, its regulation, its equipment problems, its operating economics, or the people in it. His entire approach is deceitful. Whether this is intentional with a long-range motive, or whether he is just plain naive, we cannot answer.

What Mr. Bolles believes is his own privilege, but his book will be rather widely read in all probability and this is where the harm comes in. A charge of wrong-doing repeated often enough, with no more than a half-truth to back it up, can become an accepted fact in the public mind. Simply because he twisted a plainly factual and obvious situation into reverse, Mr. Bolles has placed an entire industry on the defensive. It's highly dangerous stuff.

Perhaps this book on "How to Get Rich in Washington" is as good an illustration as any for the acute need of public relations by the industry as a whole. The industry's accomplishments in the past decade have been as startling and commendatory as those of any enterprise in the history of the country. But the true story isn't being told. There is an assumption in the public mind (thanks to men like Bolles) that the airlines are being unduly subsidized. The story of what the government invested in the development of an air transport system for the country, and how the industry has more than paid back the investment, must be told or uninformed and superficial critics such as Mr. Bolles (and critics with hidden axes to grind) will have succeeded in planting a base libel which will be difficult to overcome.

WAYNE W. PARRISH



U. S. COAST GUARD PHOTO

Versatility Unlimited—With the recent addition of the big, ten-place HO4S Sikorskys to its helicopter fleet, the U. S. Coast Guard is in a better position than ever to carry out the wide variety of missions for which it is justly recognized. Almost as soon as they were delivered, they were used by Coast Guardsmen to airlift medical aid to travelers on a snow-bound train high in the Sierras and to save five survivors of a bomber crash in Washington's Olympic Mountains.

Ever since 1943, the Coast Guard has pioneered in the use of helicopters for search, rescue and other missions. With the continuing improvement in helicopter performance provided by Sikorsky, this versatile type of craft has become indispensable to the Coast Guard.

The Coast Guard also uses Sikorsky helicopters in such vital duties as security checks of ships and anchorages . . . checking harbors for oil pollution . . . inspection of navigation aids . . . harbor surveys and numerous other missions all performed with greater efficiency by the helicopter than by any other means.

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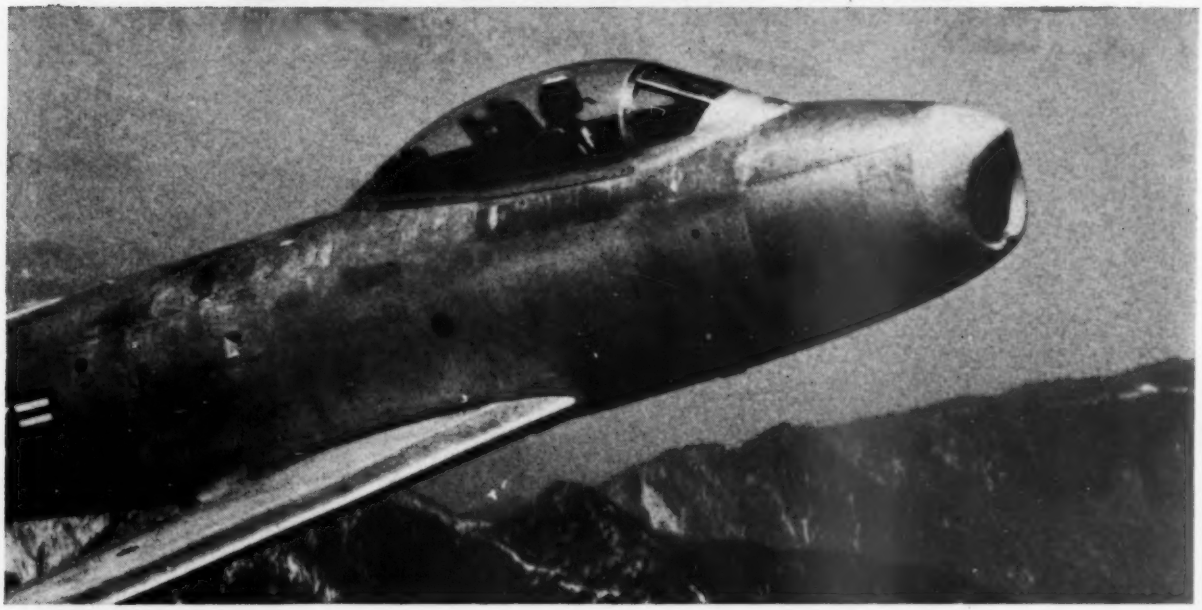
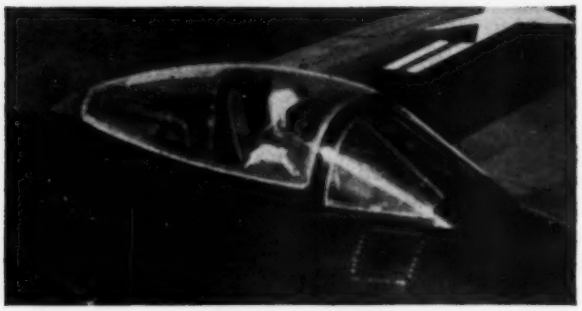
ONE OF THE FOUR DIVISIONS OF UNITED AIRCRAFT CORPORATION

B.F.Goodrich





How rubber got the bugs out of a "greenhouse"

ALTITUDES of 8 miles or more used to spell trouble for a plane's "greenhouse"—the pressurized plexiglass canopy that fits over the cockpit. The inflatable seal between the greenhouse and cockpit would sometimes burst from the effects of low pressure on the outside, high pressure on the inside, letting the air inside the greenhouse rush out.

B. F. Goodrich engineers, called on by the manufacturers, studied the problem. A really effective inflatable seal, they figured, should blow up like a paper bag instead of like a balloon—easier and with lower, safer pressures. Here's how they made a seal that would work that way: They took a special fabric, rubber-coated on both sides, and vulcanized it in collapsed position to a flexible rubber base. Inflated, the rubberized fabric simply lifted to sealing position with little or no stretching. Sealing was practically instantaneous, with pressure only a few pounds above that inside the canopy. Furthermore, it would inflate with less pressure at minus 65° than old-type seals required at room temperatures.

The new seal has other advantages, too. It has more resistance to wear and damage than ordinary seals. It fits complex curves better. It seals and unseals faster. Sliding wear and scuffing are minimized.

The new B. F. Goodrich seal is now used on more than a dozen makes of planes, including the three jets above: North American Sabre, top; McDonnell Banshee, bottom left; Northrop Scorpion, bottom right. This new type of seal is one of many aviation developments that have come from BFG, leader in rubber research and engineering. Other B. F. Goodrich products for aviation include tires, wheels and brakes; heated rubber; De-Icers; Avtrim; Plastilock adhesives; Pressure Sealing Zippers; fuel cells; Rivnuts; accessories. *The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.*

B.F.Goodrich
FIRST IN RUBBER

ESTABLISHED JUNE 1, 1937

American Aviation

VOLUME 15, NUMBER 42

Pan American Gets Improved DC-6 B's

PAA's version can be quickly changed to accommodate 44, 56, or 85 passengers in matter of hours.

By WILLIAM D. PERREAULT

DELIVERY of the first of Pan American World Airways' Douglas DC-6B's, one of the 39 aircraft representing a $50-million investment, introduces an essentially new model into airline operation. The PAA DC-6B's, which will be called the Super-6 Clippers, are heavier, longer-range versions of the DC-6B, especially modified to fit into PAA's trans-Atlantic tourist operation which starts May 1.

Quick Change

Pan American officials boast that the Super-6 Clippers are the most versatile aircraft ever put into service. Core of this claim is the interior arrangement, which provides seating accommodations for 44 passengers in luxury appointments or up to 85 passengers in tourist accommodations. The changeover from one type of seating to the other, or to a third arrangement with 56 seats, can be accomplished in a matter of hours.

Gross operating weight of the PAA DC-6B's is 107,000 pounds, up 7,000 pounds over the basic DC-6B. Fuel capacity is 5,526 gallons, up 800 gallons. The first nine of the Super-6 Clippers will have 10-tank fuel systems with 5,406-gallon capacity, but the remaining aircraft will have eight-tank systems of 5,526-gallon capacity. This provides approximately 800 miles greater range for the new type than for the old.

More Powerful Engine

Part of the improvement is attributable to PAA's use of Pratt & Whitney R-2800 CB-17 engine, rated at 2,500 hp for take-off, 100 hp more than the CB-16 series engines normally used in the DC-6B's. The CB-17 uses grade 108/135 fuel, as compared to grade 100/130 for the CB-16. Since the CB-16 and CB-17 engines are the same except for the grade of fuel used, the Super-6 Clippers have been certificated to operate on either type engine. Using the premium fuel, maximum gross weight is 107,000 pounds, while with grade 100/130 this is reduced to 102,800 pounds.

Flexibility of the cabin arrangement (see drawings) provides Pan American, for the first time, with an aircraft which can readily be shifted from one route or division to another, switched from luxury service to regular or coach service, or otherwise moved around the route to meet scheduling requirements. This will meet some of the need for spare aircraft.

To accomplish this flexibility all seats are mounted on tracks, a system designed by Pan American and installed by Douglas engineers. For the luxury service, 44 sleeperette seats are installed with 57-inch spacing. Five upper berths are also provided and for day operations a seven-place lounge. For night use the lounge can be employed, but this requires limiting the passenger load to 40 persons.

The Sleeperette interior is divided into three compartments. There are eight seats, with front row seats reversible in the forward compartment, 22 seats in the main compartment, and 14 (or 10 seats and a seven-place lounge) in the rear. Two of the upper berths are in the forward area, available to the crew if necessary, and three in the rear.

The Super-6 seats were custom-designed to PAA specifications by the Aerotherm Company of Bantam, Conn., a subsidiary of The Thermix Corp. of Greenwich, Conn. The Sleeperette seats recline up to 65 degrees, have adjustable leg-rests, and are spaced 57 inches apart in the cabin. They feature foam rubber cushions two to four inches deep.

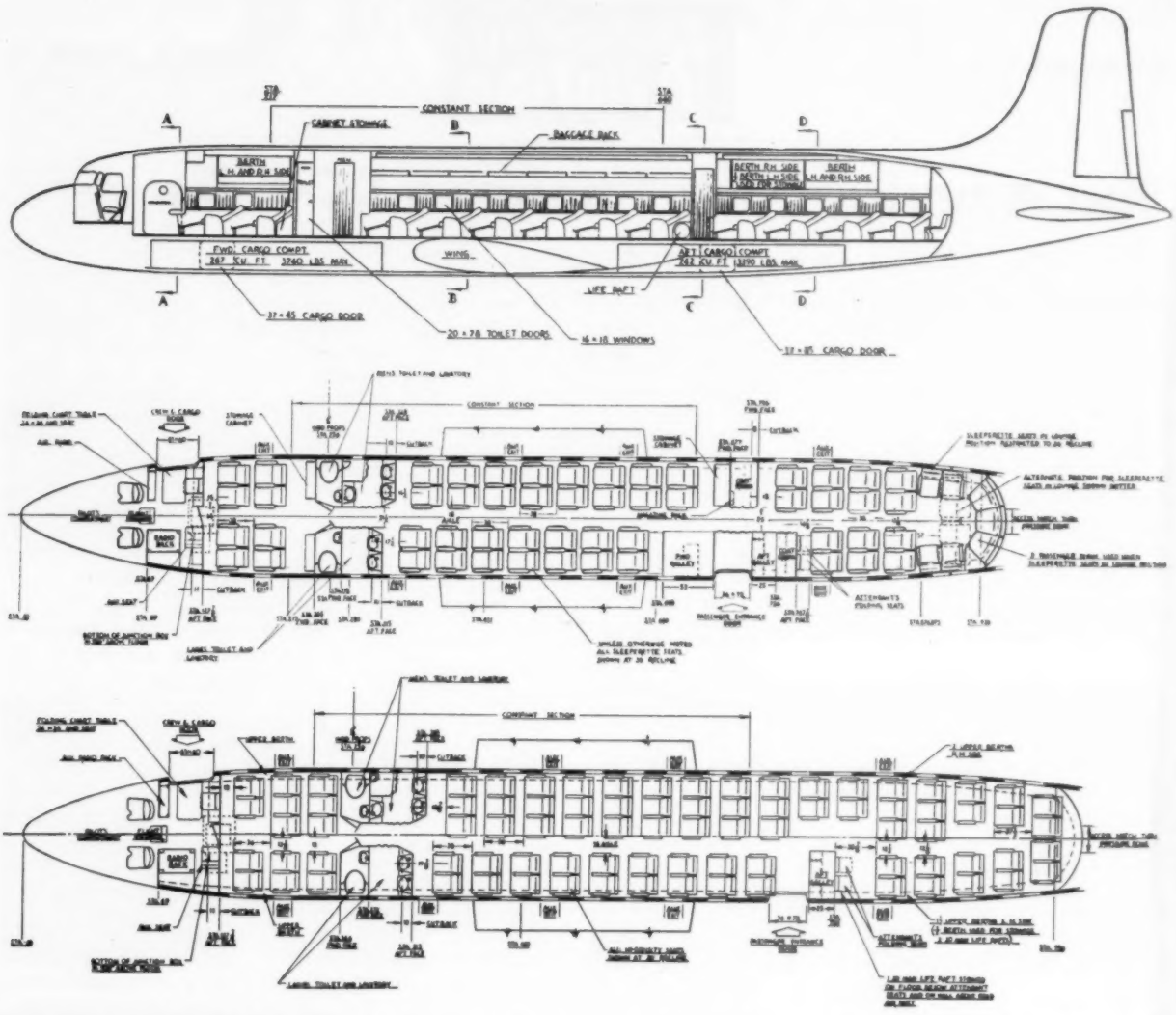
Tourist Seat

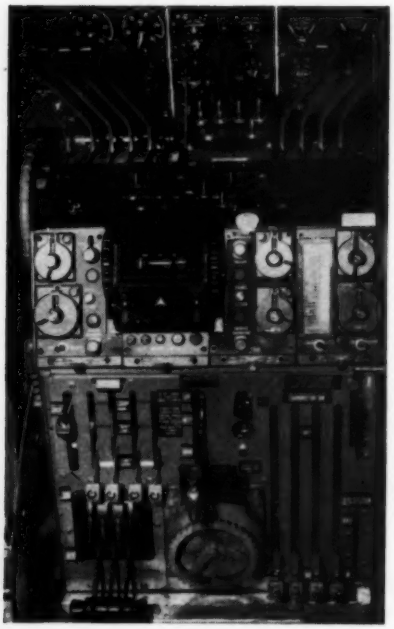
The tourist seat is basically the same as the Sleeperette but reclines to only 45 degrees, and is a slightly narrower, lighter-weight design. The seats are 17 inches wide between armrests, 19 inches deep, and are spaced 38 inches apart. The standard interior uses the regular Sleeperette seat without leg rest, with recline limited to 45 degrees, and uses the 38-inch spacing of the tourist arrangement.

The standard 56-passenger interior features eight seats in the forward compartment, 30 in the main compartment, and 18 in the rear, plus the same three berths.

In the 85-passenger tourist interior

85-PASSENGER tourist interior is shown in PAA's Douglas Super-6 Clipper.





CONTROL PEDESTAL of the PAA DC-6B consolidates all radio controls in one compact unit.

there are only two compartments, the forward one with 12 or 14 (12 for trans-ocean operation) seats, and the main with 71 seats. The lounge and cabin berths are eliminated.

The galley, which can be completely curtained off, was built by Mansfield Aircraft Products, Mansfield, Ohio, and includes storage provisions for two first-class meals for 56 passengers and seven crew members, bar service, liquor, and glass storage. A coffee urn, two Frigidinner ovens for heating precooked frozen meals, eight-gallon drink-water containers, seven-gallon water reserve for coffee, four hot or cold liquid containers, three electric hot cups, refrigerator ice cube storage, two small sinks for incidental washing, tray carrier racks, and miscellaneous storage space are also provided, plus an electrical outlet for a hot plate grill.

The specially developed control pedestal arrangement of the Super-6 Clippers provide all radio controls in one location (see photo). Equipment includes dual high frequency communications systems, dual ADF's, omni-range and instrument landing system equipment, one high-range altimeter, one low-range altimeter, Loran, a public address system, and a Sperry Zero Reader. Automatic approach coupling equipment and a periscopic sextant are also provided.

Improved high-capacity Douglas superchargers, engine driven, provide the cabin with up to 100 pounds of air per minute, assuring 8,000-foot cabin altitude up to a 25,000-foot pressure altitude. The superchargers provide sea-level cabin pressure to 12,500 feet, and 4,000-foot cabin pressure to 18,300 feet.

Other features of the Pan American Douglas DC-6B's include:

- Sperry engine analyzers.
- Provisions for a voice recorder in the cockpit.
- Special gust-lock installation.

Braniff, MCA Protect Employes in Merger

With virtually no airline opposition to their proposed merger, Braniff Airways and Mid-Continent Airlines have placed major emphasis on employe protective measures in what may be a pattern for future trunk-line mergers.

Results of these measures, outlined at CAB hearings by Braniff's Executive Vice-President Charles E. Beard, are:

- **Only 97 out of a combined total 4,000 employees** of Braniff and MCA face dismissal as a result of the merger, with that number subject to reduction.
- **There will be no dismissals** of pilots, mechanics, or communications, dispatching, or hostess employees and no "wholesale" dismissal of any employees.
- **Union and non-union employees will be integrated** into the combined system in no worse a position with respect to compensation than occupied at the time of the merger.

Furthermore, Beard predicted only minor impact on bases now maintained by Mid-Continent. At Minneapolis, he said, MCA's maintenance base would be maintained with no changes. MCA's communications base and dispatching center at Kansas City would be maintained, for the time being, at that city. Later, he indicated, consolidation of those functions with Braniff's would be worked out, with Dallas as the probable location.

Dismissal Allowance

Beard said a 60-day notice of consolidation would be given to the MCA communications and dispatching personnel in order to facilitate the move to Dallas.

MCA's reservation control in Kansas City apparently will be consolidated with Braniff's at Dallas, upon consummation of the merger.

Beard indicated that immediately after merger agreement was reached with MCA, discussions were started with the various labor organizations out of which, he said, "we've gotten a better concept of their problems."

Labor controversies have complicated other merger proceedings before CAB, notably the Pan American-American Overseas case, and conceivably could prove a major stumbling block in the path of pending mergers which otherwise are being expedited by the Board.

But a program such as that prepared by Braniff and MCA is viewed by many as the closest to a solution. It was designed, the companies said, "in recognition of responsibilities to employes and for the purpose of avoiding or alleviating hardships which may arise as a result of the merger."

Beard claimed that the 97 possible dismissals because of the merger could be reduced, possibly entirely, by normal attrition and a practice under which current vacancies are being kept open, where practicable, to be filled by those who may otherwise be displaced.

However, if an employee is to be dismissed, a "dismissal allowance" formula has been devised. Generally, for a "typical" three-year employee, a monthly allowance of 60% of his average monthly earnings will be paid for 18 months. The length of payment increases or decreases in line with the years of service given by the employee.

BLACKBURN and General Aircraft Ltd. have received an order from the Ministry of Supply for the completion of the Mark II Universal Freighter. Mark II will have four Bristol Centaurus engines in place of the Hercules units on the original prototype, which is undergoing final flight tests (above). An additional 3,500 hp raises payload to 20 short tons. Maximum cruising speed will be 225 mph.

Douglas Gets $8 Million DC-7 Order From NAL

An $8 million purchase order for four DC-7 aircraft and parts has been placed with Douglas Aircraft Company, National Airlines has confirmed. First delivery is scheduled for the fourth quarter of 1953 with the others starting in January, 1954. National expects the new planes to reduce New York-Miami flight time to three and one-half hours.

The DC-7 order is part of NAL's $30-million equipment program which will see delivery of eight DC-6B aircraft this summer and delivery of 14 Convair 340's in 1953.

Transport Production Figures Set by ACC

Start of production on 82 new air-carrier type aircraft and continued work on 357 transports now under construction has been approved by the Air Coordinating Committee, as well as production of 11,379 non-air carrier aircraft, during the 30-month period ending September, 1954, as provided in the 6th Quarterly Aircraft Production Program. Program has been sent to the Defense Production Administration for allocation of controlled materials.

Fifty-four of the 82 new transport types are for domestic operators, the remaining 28 for foreign service. The aircraft are divided among the manufacturers as follows:

Douglas Aircraft Co.:
DC-6B—35
DC-7—29

Lockheed Aircraft Corp.:
L-1049-B—5
L-1049-C—2

Consolidated Vultee Aircraft:
CV-340—11

Fourteen manufacturers will participate in the non-air carrier production with rates per manufacturer varying from one per month to about 150. Production by periods covered include:

Three quarters 1952.....3,075
Four quarters 1953.....4,719
Three quarters 1954.....3,585

FIRST PHOTO of airport surface-detection equipment, under development testing at CAA's Indianapolis Technical Development and Evaluation Center, is shown above as released by the Air Force. Photo is a picture of the radar scope in the control trailer. Note the outline of the airport runways, taxiways, and the form of the DC-3 on the runway.

How Airport Surface Detection Operates

FROM 30-FOOT tower the antenna of the ASDE scans the airport.

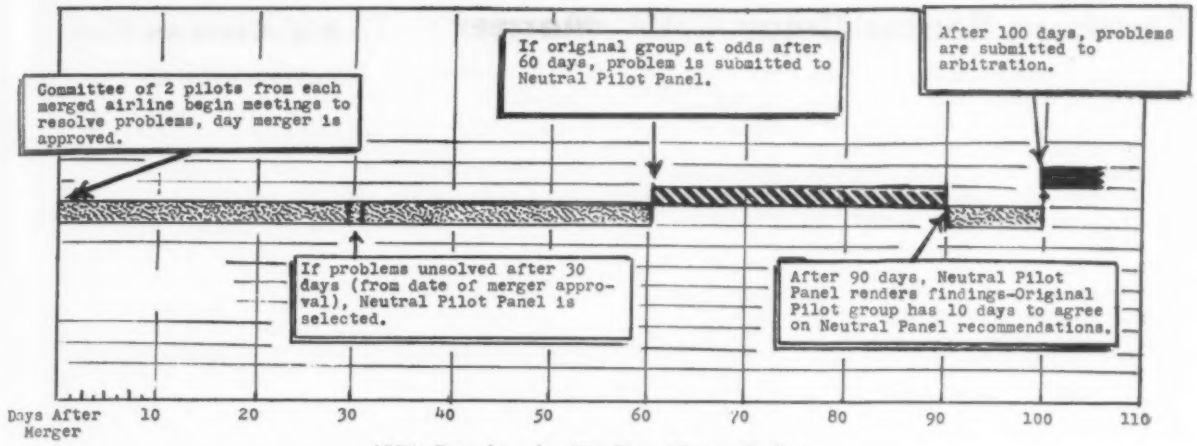
FIRST factual data on the U. S. Air Forces' Airport Surface Detection Equipment have been released in the form of two photographs showing ASDE at work (see photos). Release of the photos coincides with the completion of an extensive evaluation of the Gilfillan Brothers-built ASDE by the CAA's Technical Development and Evaluation Center at Indianapolis. A rough draft of the evaluation report is scheduled to be turned over to the Air Navigation and Development Board next month.

Airport Surface Detection Equipment uses radar to sweep the area of the airport 60 times per minute and presents a changing picture of field conditions, as shown in the accompanying photograph, on a radar scope mounted in the control van. Possibility of remote location of the scope in the control tower is under investigation.

The prototype equipment was built by Gilfillan Brothers for the U. S. Air Force and turned to ANDB for evaluation. Airborne Instruments Laboratory made certain modifications to the equipment, which was then tested at Indianapolis on ANDB funds of $68,000, including modification costs. After initial tests at Indianapolis, where these photos were taken, the unit was moved to Minneapolis' Wold-Chamberlain Field and tested with snow ten-feet deep along the runway edges.

An engineering model of an advanced ASDE is now being designed and built by the Airborne Instruments Laboratory, Mineda, N. Y., at a cost of approximately $267,000.

Last minute changes in the ASDE specification are now being worked out to take into consideration results of the prototype evaluation. This may lead to a change in the 25,000-megacycle operating frequency.


Committee of 2 pilots from each merged airline begin meetings to resolve problems, day merger is approved.
If original group at odds after 60 days, problem is submitted to Neutral Pilot Panel.
After 100 days, problems are submitted to arbitration.
If problems unsolved after 30 days (from date of merger approval), Neutral Pilot Panel is selected.
After 90 days, Neutral Pilot Panel renders findings-Original Pilot group has 10 days to agree on Neutral Panel recommendations.
Days After Merger
10
20
30
40
50
60
70
80
90
100
110

ALPA Procedure for Handling Merger Problems

ALPA to Settle Own Merger Problems

Pilots group has set up its own machinery to deal with seniority and related questions.

By ERIC BRAMLEY

THE Air Line Pilots Association wants to make certain that seniority problems and related questions resulting from airline mergers are settled by the pilots themselves, rather than by an outside group, and it has established the machinery to accomplish this purpose.

Under the procedure established, even arbitration, if necessary, will be handled within the Association.

Advantages of this set-up, according to ALPA, include:

Pilots can avoid having a seniority integration directed by some outside agency "which might not take into consideration some of the problems involved."

United Front

When pilots of the companies in a merger present a united front, "the Association is in a strong position to press for suitable employee protective conditions through the CAB, or through collective bargaining under the Railway Labor Act with the merged company."

Here's the procedure to be followed:

Pilots of the airlines concerned shall each select two representatives (a captain and a co-pilot) to act for the respective groups.

As soon as CAB has acted on the merger, or earlier if the groups agree, the representatives will meet to consider seniority and related problems.

If they can't reach a decision within 30 days, or if they still have some unsolved problems, a neutral panel of five pilots from other airlines will be selected as an "emergency board" to hear the dispute.

If the original pilot groups have been unable to agree within 60 days after approval of the merger, it is then submitted to the neutral panel. This group must make recommendations within 80 days after approval of the merger.

Ten-Day Limit

Original pilot groups then have an additional 10 days to agree on the neutral panel's recommendations. If they are unable to do so, arbitration becomes mandatory.

The arbitration tribunal will include the four original pilot representatives plus one neutral, and its decision shall be final and binding.

Asserting that ALPA's position has been that "the pilots shall not be injured" because of mergers, the Association added that the Fifth Executive Board had set up a committee to study mergers. The committee reported that it was not possible to "set up a definite, mathematically precise formula by which all mergers should be accomplished . . . Each must be settled with full regard for the problems peculiar to it." The committee then recommended establishment of its procedure.

Case In Point

One example of what ALPA is trying to avoid is the still-pending seniority question arising from the Pan American-American Overseas merger. Pilots of the companies were unable to agree, and the case was eventually decided by CAB. The Board, however, stayed its decision when the National Mediation Board agreed to consider the case, upon which hearings are still being held.

British Pilots Propose Simulator Use in Tests

A proposal to utilize the Boeing Flight Simulator for Stratocruiser pilot tests has been made by the Ministry of Civil Aviation to the British Air Line Pilots Association. It was also suggested that the simulator be used for instrument rating renewal tests in place of flying tests for pilots of all aircraft.

After hearing reports from BOAC test pilots, who have been using the device, the Air Safety and Technical Committee of BALPA came to several conclusions including:

- **Although it was clearly** not possible to meet operational requirements with the simulator, it could be used to practice emergency procedures and asymmetric flight prior to the actual flight test.
- **After being checked** on the simulator, a pilot should be assessed by a practicing pilot on his own line.

Tests Begun on 340

First production model of the Convair-Liner 340 has started an accelerated service test program, with United Air Lines' first plane being used. On the initial trip, logging a six-hour and seven-minute round trip between San Diego and El Paso, tests were conducted with the heating, ventilation, and communications systems. Single engine operation also was demonstrated.

Southern Routes Delay CAP Merger

Future course of the Capital-Northwest merger proposal rests with CAB following bids for Capital's so-called "southern routes" by the Delta-Northeast group and Chicago and Southern, and a proposal by CAB's bureau counsel which would condition approval of the merger on transfer of the Capital routes to another carrier.

Capital claims it is doubtful if the voluntary merger agreement with Northwest would survive the "procedural ordeal" which might result from granting the Delta, C&S, and bureau counsel requests. Carrier's attorney Charles H. Murchison sums it up this way:

"If CAB should transform the merger case into a broad investigation of possible route transfers to third parties, the Board would greatly delay a final decision and would seriously jeopardize the ultimate consummation of the merger."

But Delta, represented by former CAB chairman L. Welch Pogue, looks at it differently. Delta has offered to buy the controversial routes, designated as Nos. 51 and 55, for "substantially over $4 million." Capital claims the routes are not for sale. In seeking CAB help for the routes which would link Delta's and Northeast's systems, Delta argues that the current Capital-Northwest merger case "fundamentally involves the question of route integration."

Delta and C&S claim that the routes which extend south and southeast out of New York do not integrate with the combined system proposed by Capital and Northwest. On this position they could oppose the merger as the case stands now. Thus, they argue, the public interest and national route picture would best be taken care of by considering also which carrier or carriers the routes should be transferred to.

C&S has not made an offer to Capital for the routes, but told CAB it is willing to buy the routes at a price deemed reasonable by the Board. American, Eastern and Piedmont have opposed moves to enlarge the merger beyond its present scope. Now it's up to the CAB.

Trunk Lines Ask $1 Overall Increase

Majority of the domestic trunkline industry is seeking CAB approval on proposed passenger fare increases to offset rising costs. Seven of the carriers, headed by American Airlines, have filed tariffs for an April 16 effective date. They want an across-the-board increase of $1 in all fares and elimination of discounts for round-trip, circle-trip, and open-jaw travel.

American was joined in its filing by Capital, Continental, Northwest, TWA, United, and Western. Three other lines, Delta, Eastern, and National, competitive on the east coast or between Chicago and Miami, favor the same increase plan for an April 27 starting date.

Braniff and Chicago and Southern are "sympathetic" with the need for an increase claimed by other lines and may join in the $1 fare hike or introduce an increase plan of their own. Only Colonial, Mid-Continent, and Northeast, all involved in mergers with larger lines, have indicated no position as yet.

CAB, which had been driving for lower coach fares and expanded coach services, was expected to issue a statement of its position on the increase proposals following examination of "justification statements" which the carriers submitted.

Chiefly responsible for the fare crisis is the recent trend under which the carriers claim costs are rising more rapidly than revenues. Increase plan originated by American reportedly will serve a two-fold purpose if approved by CAB. It will be minor enough to prevent any material reduction in traffic and will represent the first move to develop a "tapering" structure under which the fare-per-mile will be less for long than for short-hauls. Currently, fares are based on the same fare-per-mile regardless of distance.

But the job of selling CAB and working out complications that may result in the over-all fare structure raised talk of emergency meetings between the Board and airline presidents as well as between tariff experts of CAB and the industry. CAB may suspend the proposals and the most serious tariff investigation in Board history could develop.

Short to Build Comet

With a view toward doubling the output of Comet jet airliners, an agreement has been reached by The deHavilland Aircraft Company, Ltd., and Short Brothers and Harland, Ltd., of Belfast, Northern Ireland, whereby the resources of both companies will be utilized to achieve maximum production efficiency. It is expected that the first aircraft will emerge in 1954.

The marketing of the Comet will continue to be handled by de Havilland.

Air Centers Get Questionnaires

The President's temporary Airport Commission, headed by Lt. Gen. James H. Doolittle, has sent a series of eight questions on airport matters to cities, selected on the basis of air traffic density, throughout the United States.

In letters to the cities involved requesting that the information be forwarded to the Commission by April 7, Doolittle stressed that the President has asked a Commission report within 90 days. He said the Commission is appointed "to study our national airport policy in terms of the requirements of National Defense and the importance of a progressive and efficient aviation industry." Safety, welfare, and peace of mind of people living close to airports will be taken into account, the Doolittle letter said.

BEA Drops 'Copter Run

British European Airways is terminating its experimental helicopter service, the Transport Ministry having withdrawn the subsidy for the service.

BEA initiated the project, which covered a 120-mile route between London and Birmingham, to gain experience for possible future helicopter passenger services between a number of points in Great Britain. It was begun in June, at which time the Ministry of Civil Aviation and the Ministry of supply covered some of the expenses with a grant of $224,000 for the year.

PDA Refuses to Suspend Order No. 4

The Petroleum Administration for Defense does not intend to cancel or suspend PAD Order No. 4, which the House Interstate Sub-Committee on Air Safety had requested in the interest of airline safety.

Deputy PAD Administrator Bruce K. Brown, in a letter to Rep. Lindley Beckworth (D., Tex.), set forth a number of reasons on which PAD has based and continues to base its belief that PAD Order No. 4 does not "impair the flying safety of well-managed airlines." He stated that his agency would lift the order increasing the lead content of aviation gasoline "as soon as the supply situation permits."

PAD did not answer or attempt to answer the sub-committee's contention that the anticipated shortage of commercial aviation gasoline on which the order was based never materialized and does not exist today.

AIR TAXI operated by **Red Bank Airport, Inc., W. R. Laudenslager, president, enplanes an airline passenger bound for an off-line destination. Laudenslager is first vice president of the National Air Taxi Conference.**

Air Taxis Want More Cooperation

Survey shows confidence in field, but resentment at indifference of airline personnel.

By RICHARD FULLER

DESPITE RECENT moves by the Air Taxi Conference and some participating airlines to bolster sagging taxi operations and bring about closer liaison between operators and airlines, the volume of air taxi business has not come up to the expectations of the vast majority of the air taxi operators who answered a broadside recently circulated throughout the industry by AMERICAN AVIATION magazine.

The broadside questionnaire, submitted to 59 operators and answered by 26, showed that:

* **It is the almost unanimous** opinion among the taxi operators surveyed that scheduled airlines' employes are unfamiliar with NATC and taxi service.

* **Most operators believe** that they are not getting sufficient cooperation from scheduled airlines.

* **Confidence in the basic** concept of the taxi operation is unshaken. An overwhelming majority of the operators affirmed that NATC continues to constitute a worthwhile effort.

Although airlines have been urged to acquaint counter personnel with techniques for scheduling taxi service to off-line points, the survey shows that taxi operators still put the finger of blame for much lost business on airline ticket agents.

One operator wrote that though main offices of airlines are willing to push air taxi service, reservationists are unfamiliar with taxi affiliations. "I know that I can walk up to any counter at these places and inquire of service to the points we serve and they will tell me that no such service exists," he wrote.

Characteristic of the attitude of many of the operators was a suggestion made by Cranston Air Service, San Mateo (Calif.) Airport: "It's time the airlines drop their attitude of looking down their noses at small airplanes. Air taxis can and do serve as vital a portion of the travelling public as do surface taxicabs."

High Time

From Pat Combs, owner of Skymerchants, Brown Airport, Tulsa, Okla.: "We stand ready and willing to cooperate in any way possible to sell the public on the idea of using air taxis to non-scheduled stops. We think that it is high time that we receive the full cooperation of the participating airlines in that they be required to instruct their employes of the agreement and to require of them their fullest cooperation."

But in spite of an almost universal implication from the questionnaires that further coordination between operators and airlines is imperative, many suggestions from the operators contained strong notes of optimism. Some were frank in admitting that members of the Conference must take their share of blame for loss of some ticket sales. From Gran Aire, Inc., Curtiss-Wright Airport, Milwaukee, Wis., comes this opinion:

"I personally feel that the NATC is an excellent vehicle and if given a fair chance will become a profitable venture. We are all being subjected to the usual amount of growing-pain difficulties and inefficiencies. I am . . . enthusiastic about the whole thing, and when it is discussed with airline people as well as other businessmen, they are receptive and wish to be most cooperative."

Education

One operator wrote that "Both airlines and operators must launch a continuing educational program to keep reservation and ticketing personnel informed of the system and how it works plus its limitations as to capacity of planes and weather limits."

Other specific suggestions designed to increase business include the following:

• **Issue through tickets** after establishment of universal air taxi rates. (The Conference recently voted to adopt a zone-rate system.)

• **Inaugurate further meetings** between operators and airlines such as the Northeast Airlines conference with NATC members early this year. (AMERICAN AVIATION, March 3).

• **Begin a practice** in which air taxi operators back up scheduled flights over short routes, thus permitting reservations sections to encourage "go show" passengers, assuring passengers that they can get to their destination by air taxi if the scheduled flight is full. This would help airlines to get 100% load factors and decrease the "no show" problem.

• **Set up facilities** for discharging passengers close to their airline counters. Watcha-McCollum Flight School, Danville, Ill., reports that at Chicago Midway Airport "this can [only] be done by long conversation with the tower, providing the engine is not shut off." The writer states that at Chicago Midway there is no way at present for the airline, the customers, and the taxi ship to get together for loading.

• **Announce availibility** of air taxi service on terminal public-address systems.

• **Include an NATC folder** along with other promotional material in airliner seat pockets.

• **Get rid of the name "taxi."** "Let's use aeronautical terms."

• **Eliminate insurance clauses** in passengers' personal insurance policies

which limits validity of policies to scheduled airline flights. "We estimate that 90% of our flights lost are due to lack of full insurance for passengers . . ."

In answer to the questionnaire sent him, J. Raymond Brummet, president of BACA Airlines, Memorial Airport, Jefferson City, Mo., has written a lengthy and incisive survey of the air taxi business as he sees it. Following are excerpts from his letter:

• **"The passenger asks:** 'Is there any air service to Podunk?' Ticket counter personnel think only in terms of big scheduled airlines as furnishing air service, so they reply, 'No, sir . . .' That's it. The passenger walks away and makes plans to take a train for the last part of his trip, maybe all of it. What do they think we are if we are not air service? The passenger might not be at all averse to riding smaller equipment. Merely by telling him that, yes, there is air service to Podunk that is provided by air taxi carriers, he might be glad to use this service. Heaven forbid, don't use the word 'charter.' I paddle my children when I hear them say that dirty word.

• **"Ninety-nine per cent** of the [airline] personnel do not know that they are to issue an exchange order and take the passenger's money. As late as last November, when I visited the St. Louis district offices of the airlines located there, not one of them knew that they were to issue an exchange order and finally, after 30 or 40 minutes of searching through their files, they found that they were supposed to do this.

One Way

• **"The airlines claim** that they can't determine our rates because they are not uniform. This is true in most cases and should be remedied. However, we have set up and printed in the Official Airline Guide fixed rates to towns that we selected to serve, in order to eliminate any confusion. Our suggestion for clearing up this matter is not necessarily to make all rates uniform, but to make them show the rates for the one-way mile instead of the round-trip miles. Most passengers will know the approximate distance the town is from the terminal. If one doesn't, a quick glance at a map will give it to him. If the distance is 100 miles and the charge is 20c a mile, the cost is $20.00 plus tax. Isn't that simple enough?

• **"In some cases,** the personnel of the air taxis do not shape up in their appearance and dress to airline standards. Inexpensive uniforms are easily obtainable. Sew on a pair of wings somewhere and you look like you're in business. We might add that a uniform cap —not the long-bill sun visor but a true uniform cap—tops off this outfit nicely. This is what the customer wants. He doesn't want to fly with you in a business suit like a Sunday pilot, and he doesn't want to fly with a grease monkey either. He is used to his pilots on the airlines being in uniform and he expects you to be also."

Rickenbacker Urges Newark Reopening

Sees millions in revenue being lost because of Communist attempt to hurt U.S. transport industry.

A WARNING for all cities with busy commercial airports was sounded by Capt. Eddie Rickenbacker, chairman of the National Air Transport Coordinating Committee, in his testimony this month before the House Interstate and Foreign Commerce subcommittee on air safety.

Essence of the warning was that:

• **Following a fantastically improbable series** of three totally unrelated airliner crashes in its vicinity, Newark (N. J.) Airport, one of the nation's largest and busiest, was closed down.

• **It has not been established,** and presumably will not be, that either of the three accidents stemmed from the operating procedures and facilities of the airport, which previously had accommodated hundreds of thousands of plane landings and take offs over a period of 25 years without a single fatal accident prior to last December, and which is regarded by experienced airline operators as one of the safest terminal-type airports in the country.

• **Newark Airport was not closed because it had been found unsafe** but was closed out of deference to an excited and worried public, whose fears had been fanned to some extent by Communist agitators.

Showing the committee Communist-printed leaflets and DAILY WORKER articles inciting residents of the area to (1) see that Newark Airport is closed and kept closed, (2) see that "responsible officials" of the Port of New York Authority and the airlines involved in the series of three unfortunate accidents be indited and jailed, and (3) demand full reparation from the airlines and the PNYA for damages caused by the accidents, Rickenbacker said:

Serious Threat

"If the Comunists in this country could permanently close Newark Airport and a few other major fields through such methods, I am sure the masters in the Kremlin would award them gold medals for distinguished service. The closing of just eight of the largest of our 548 civil air terminals would paralyze the national air transport service and seriously hurt our rearmament and national defense programs, a turn of events which Stalin would greatly appreciate."

Urging the reopening of Newark Airport on a limited operations basis at the earliest practicable date, and preferably before summer airline schedules are put into effect in late April, Rickenbacker said only seven airports in the country exceed the volume of operations, passengers and goods that could be carried on the 100 or so added airline services in and out of the New York metropolitan area that normally would be started in the next 60 days and may have to be cancelled if Newark is not reopened.

Duff Leaves Colonial After Election of Dykes

Donald A. Duff resigned as executive vice president and general manager of Colonial Airlines on Mar. 31, stating that his resignation grew from Alfons B. Landa's departure from the company. A statement said that the change "will make it impossible for him to carry out his program."

Duff, former vice president of Frontier Airlines, was sponsored into Colonial on January 9 by Landa, then president, "who anounced that Duff would function in all respects as president, referring to Landa only such matters as Duff believed required his attention," the statement said.

Landa resigned Marc. 4 and Branch T. Dykes, former vice president-operations, was elected to succeed him in a surprise vote.

Following Duff's resignation, the following also resigned: O. A. Byrne, acting general traffic and sales manager, Don H. Stevens, assistant to the treasurer, and Irene Replogle, interline and public relations representative. They had all formerly worked with Duff at Frontier.

P904 Differential Pressure Safety Switch for cabin heaters. Stall indicators or landing gear and flap warning devices.

Deluxe Reclining Passenger Seats are designed for comfort and safety on day and night flights. Proved ruggedly durable, easy to service.

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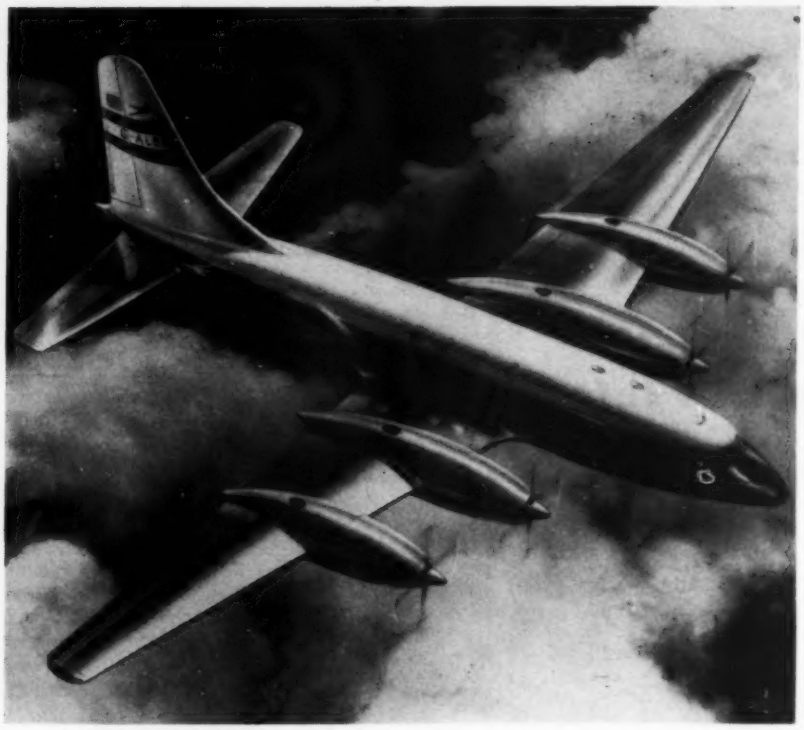


SCHEDULED FOR SUMMER flight testing is the prototype Bristol 175 Britannia, 25 of which are on order by British Overseas Airways Corp.

Bristol Reveals New Data on Britannia

Turboprop workhorse of BOAC fleet will feature track-mounted seats for quick switch to coaches.

WHEN the Bristol 175 Britannia starts with British Overseas Airways in 1954 or '55 it is expected to become the workhorse of BOAC operations, but until recently very little information regarding the Britannia's design or performance has been released.

BOAC has 25 Britannias on order in addition to the two development prototypes ordered by the British Ministry of Supply. The airline ships, powered by four 3200 horsepower Bristol plus 800 pounds thrust Proteus turboprop engines, will be used on BOAC's trunk routes to Australia and South Africa.

Midsummer Tests

In mid-March, as the prototype Britannia moved into the advanced stages of assembly, and chances for a midsummer flight test showed promise, The Bristol Aeroplane Company, Ltd., released considerable information, including a three-view drawing (see facing page), photos recording production progress, and some performance figures.

Grossing 140,000 pounds, the Britannia will take off in 3700 feet of runway, clearing a 50-foot obstacle in a five mph wind. It will cruise at 360 mph at 30,000 feet, carrying 25,000 pounds of payload over 4,000 miles in still air. At maximum landing weight of 110,000 pounds it lands in 2800 feet of runway with a five-mile wind.

Luxury and Coach

In the role as workhorse the Britannia will be expected to serve both as luxury airliner and as high-density tourist equipment. Its wide fuselage (see drawing) feet, and track-mounted seats simplify this task. In the 50-passenger version seats are four abreast, but this goes to five abreast in a 61-passenger version, and to six abreast in a 104-passenger version for short-haul operation.

Bristol points to the high power loading and low wing loading, giving the Britannia favorable take-off and landing characteristics, and to the four-wheel bogie-type landing gears which will minimize runway loads, as typical of the design features contributing to the plane's reported versatility. Reversible-pitch propellers are provided on the turboprop engine.

Principal dimensions and other particulars regarding the Bristol 175 are:

Span	140 ft.
Length	114 ft.
Height	36 ft., 8 in.
Track	31 ft.
Fuel Capacity	8400 U. S. Gallons
Gross Weight	140,000 lbs.

The manufacturers have presented the following three examples as "typical loading cases." In a 50-passenger luxury arrangement, the Bristol 175 would take 50 passengers, 3,000 pounds of baggage, 450 pounds of consumable stores (nine pounds/passenger) and 13,550 pounds of freight, mail, or other payload. This would provide for 4,000 statute miles range or non-stop London-New York operation on 80% of all flights and 100% of returning non-stop flights.

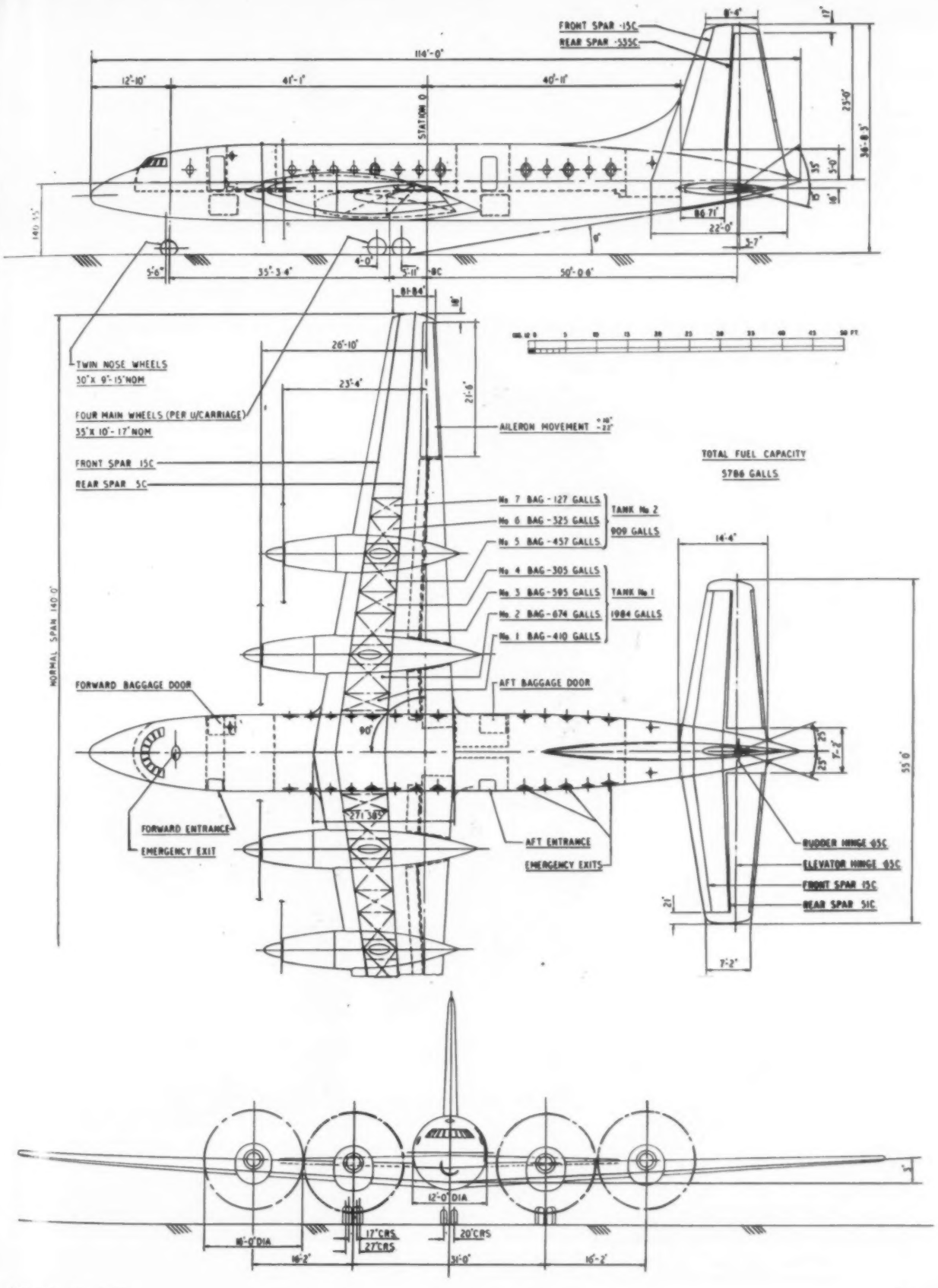
By comparison an 83-passenger version, with seats six abreast, would have its usable load distributed this way:

83 passengers	13,280 pounds
Baggage	4,980 pounds
Consumable stores	747 pounds
Other payload	5,993 pounds
	25,000 pounds

In the 61-passenger version with five-abreast seating, the Britannia's useful load includes 9,760 pounds for passenger weight, 3,660 for baggage, 549 pounds for consumable stores, and 11,031 for other payload.

Aerodynamic Data

Wings	
Gross Area	2055 Sq. Ft.
Span Nominal	140 Ft.
Aspect Ratio	9.53
Standard Mean Chord.	14'-8"
Taper Ratio	3.33/1
Setting to Body Datum (at Root)	+3°
Root Section	NACA 25017
Tip Section (Mod)	NACA 4413
Geometric Twist	2.4°
Ailerons	
Area Each (Including Tabs)	70 Sq. Ft.
Span Each	21'-6"
CA/CW (Hinge to T.E.)	.34
Flaps	
Area Total	410 Sq. Ft.
Flap Area/Wing Area	.2
Flap Area/Wing Span	.72
Max. Angle Down	50°
Body	
Length	114'-0"
Max. Dia.	12'-0"
Gross Surface Area	3416 Sq. Ft.
Fin & Rudder	
Area Clear of Body (Including Rudder Excluding Dorsal)	315.4 Sq. Ft.
Dorsal Area	41 Sq. Ft.
Rudder Area (Including Tabs)	92.2 Sq. Ft.
CR/CF	.35
T/C Ratio	.125
Tailplane & Elevators	
Gross Area (Including Elevators)	588 Sq. Ft.
Aspect Ratio	5.15
Elevators Area Each (Aft of H.L.) (Including Tabs)	85 Sq. Ft.
CL/CT	.35
Span	55'-0"
Setting to Body Datum	Neutral
T/C Ratio	.125


FRONT SPAR -15C
REAR SPAR -555C
114'-0"
12'-10"
41'-1"
40'-11"
STATION 0
25'-0"
30'-8.5"
35'
5'-0"
10'
22'-0"
5'-7"
6'
5'-6"
35'-3.4"
4'-0"
5'-11"
50'-0.6"
81-84'
26'-10"
23'-4"
21'-6"
TWIN NOSE WHEELS
30"x 9'-15"NOM
FOUR MAIN WHEELS (PER U/CARRIAGE)
55"x 10'-17"NOM
FRONT SPAR 15C
REAR SPAR 5C
AILERON MOVEMENT +20° -22°
TOTAL FUEL CAPACITY
5786 GALLS
No 7 BAG - 127 GALLS
No 6 BAG - 325 GALLS
No 5 BAG - 457 GALLS
TANK No 2
909 GALLS
No 4 BAG - 305 GALLS
No 3 BAG - 595 GALLS
No 2 BAG - 674 GALLS
No 1 BAG - 410 GALLS
TANK No 1
1984 GALLS
NORMAL SPAN 140'0"
FORWARD BAGGAGE DOOR
AFT BAGGAGE DOOR
90°
27'/36'
FORWARD ENTRANCE
EMERGENCY EXIT
AFT ENTRANCE
EMERGENCY EXITS
14'-4"
25'
7'-2"
25'
55'0"
RUDDER HINGE 65C
ELEVATOR HINGE 65C
FRONT SPAR 15C
REAR SPAR 51C
21'
7'-2"
12'-0" DIA
16'-0" DIA
17'CRS
27'CRS
20'CRS
16'-2"
31'-0"
16'-2"

ON LOAN from the U. S. Navy, this Piasecki HRP-1 tandem rotor helicopter is shown flying past the rotor test tower at NACA's Langley Aeronautical Laboratory, where it is undergoing extensive flight tests.

"HORSE COLLAR" on the HRP-1's nose, used to improve directional stability, is inspected by Jack Reeder.

SPECIAL FLIGHT TEST recording equipment in the HRP-1 gets a check.

NACA Tests to Aid Future 'Copter Design

Are existing standards of tandem rotor applicable? Piasecki HRP flight tests will help to decide.

EXTENSIVE flights tests of a Piasecki HRP tandem-rotor helicopter, on loan from the U. S. Navy, are being carried out by the National Advisory Committee for Aeronautics at its Langley Aeronautical Laboratory at Hampton, Virginia. The flight test project, under the direction of Melvin N. Gough, chief of the flight research division, and Frederic B. Gustafson, NACA's top specialist in rotary-wing research, will influence future trends in helicopter design.

The tests are part of NACA's continuing efforts to aid the military services, manufacturers, CAA, and helicopter operators; the efforts date back 20 years in this relatively new field. Today one-third of NACA's full-scale wind tunnel effort at Langley is devoted to determining fundamentals of flow, performance, and stability of various rotor designs.

Typical Vehicle

Standards now used by the Navy to determine the suitability of helicopter flight characteristics are part of specifications established two years ago, in conjunction with NACA, and based primarily on information obtained from tests with single-rotor Sikorsky and Bell helicopters.

Since that time much work on helicopter design details has been carried on throughout NACA's facilities—in the special rotor-testing tower (see photo), where conventional and jet rotors have been tested; in the vibration and flutter branch; in the structures laboratory; in the free-flight tunnel.

The current series of tests will determine the applicability of the existing standards to tandem-rotor helicopters and possibly result in new or modified standards. In the three months of testing already completed, much valuable information has been turned up and certain problems highlighted.

The Piasecki helicopter was picked at random as a typical tandem-rotor vehicle. It has been specially equipped with recording units which measure pitching velocity, control position, and normal acceleration against a synchronized time scale, providing a continuous time history during each maneuver.

Actual flight work on the Piasecki HRP-1 has been carried on by NACA pilots John P. Reeder and James B. Whitten who work with Kenneth B. Amer, project engineer for this research. In tests of the longitudinal characteristics of the HRP-1, it was shown that the stability requirements of NACA Technical Note 1983 were generally applicable.

Longitudinal stability, the tendency of the helicopter to pitch up or down when disturbed from steady flight, was determined by flights in which a Navy-specified sudden pull-up was executed under varying conditions of power and/or center of gravity locations. Mechanical stops were used to provide uniform control stick movement in successive tests.

Results showed that there was a reduction in stability with increasing power and aft center-of-gravity position. Correlation of pilot opinion on the stability characteristics with the recorded time histories, in this case established the suitability of existing standards.

One of the factors aggravating the longitudinal stability of the tandem-rotor helicopter, NACA notes, is that the rear rotor operates in the downwash of the front rotor. This reduces its lift slope with respect to the front rotor. Increased inflow also causes the rear rotor to operate near tip-stalling conditions. Moving the center of gravity of the helicopter forward helps off-set this instability.

In the case of directional stability tests, now underway, it has been found that increased power improves stability.

JIM WHITTEN (left) and Jack Reeder, NACA research pilots, are conducting the flight tests.

Wind tunnel tests of a fuselage model indicated that directional stability could also be improved by the use of spoilers around the forward end of the cabin. This was carried over to the flying unit (see photo) in the form of a four-inch wide "horse collar." As a test method this proved very effective but in practical operations it increases the drag too much.

Dutch Roll

Another stability problem aggravated by the tandem rotor configuration, NACA flight tests have shown, is the inertia resulting when the principal axis of the aircraft does not coincide with the flight path and the moment of inertia in yaw is high with respect to that in roll. In the helicopter this results because the principal axis is inclined downward with respect to the flight path in powered forward flight. The result is a form of "Dutch Roll," which points up the need for giving additional attention to product-of-inertia terms in stability equations.

These are but a few of the results obtained from the HRP-1 tests carried on to date. The full results are expected to extend the usefulness of the helicopter by making it safer and easier to fly under broader conditions, hastening the day when it can be used in all-weather operations carrying commercial passengers.

Flight Below Minimums Is Trespass, Court Rules

The principle that flying over private property, at a lower altitude than CAA-fixed minimums, is an act of trespass has been ruled by the Tenth U. S. Circuit Court of Appeals, which awarded $9,180 to Joseph and Juanita E. Gaidys for injuries and property damage incurred when an Air Force plane crashed near their home.

Said to be the first decision to this effect to be laid down, the ruling is predicated upon a recent Supreme Court decision which carried the intimation that flying below minimum altitude constitutes trespass.

According to the Circuit Judge, "The plane was not flying within the navigable airspace . . . Although the plane was approximately on and a half miles from the point of take-off . . . it was flying at an altitude of approximately 100 feet. If the plane had been flying at a safe altitude, perhaps questions more difficult of solution would be presented."

What Luggage Stands Up Best in Air Travel?

Nobody is sure, and nobody is studying that aspect of a very sore subject—baggage smashing.

Some Pointed Questions

By WAYNE W. PARRISH

BAGGAGE SMASHING is an expression as old as air transportation. It's been the subject of jokes within and without the industry. Damage claims have been high and troublesome through the years. Many airline executives believe damage to passengers' luggage is the most serious single complaint marring the relationship of carriers with their patrons.

But what's been done about it? Everbody wants to correct the complaints. Like sin, everybody's against it.

We asked a dozen top airline traffic and sales executives if they had ever conducted any research on the type of luggage construction which will best stand up under the rigors of air travel, or whether they had known of any such research being conducted.

We asked them if they ever recommend any particular kind of luggage because of durability or particular usefulness to the air traveler.

The replies are interesting. The seriousness of the problem is readily admitted. No research has ever been conducted. Some airlines recommend types of luggage, others don't. There is no uniformity on types—preference range from aluminum to plastic and fabric.

We've written to a half-dozen leading luggage manufacturers but replies have been slow coming in. We even asked the Luggage and Leather Goods Manufacturers of America, Inc., to comment on the problem. We hope to have some of these replies in a later issue.

Meantime, there's no getting away from it—air travel can be tough on luggage. Bags get a lot of handling on departing and arriving and in transferring. They may get shaken up in the air. And worst of all, they may have been squeezed at the bottom of a heavy pile of other luggage. Lightness of weight is not necessarily an advantage for types of luggage—it seems to be durability and hardness that count.

The Airlines' Replies:

James W. Austin, vice president-traffic and sales, Capital Airlines:

I have long felt that the kicking around that our passengers' luggage takes is responsible for more bad will than perhaps any other thing we do, or fail to do, in the airline business.

Austin

Forgetting for a moment the bad will, but thinking only of the monies that we spend repairing, delivering damaged luggage, etc., I know in our case it is a substantial sum, and for the industry it would be staggering.

You might not call it research, but for some time we have been observing the luggage which seems to stand up best and, for my dough, it is the *Skymate* luggage which is put out by the Hartmann Company in Racine, Wisc. Because I felt that these people had a fine products and felt that they could well afford to tell their story to an airline audience, we solicited the Hartmann Company for an advertisement in our timetable. They have been using this medium for going on two years.

At our Cleveland Management and Sales Conference in late January, we invited the Hartmann Company to have on display their *Skymate* luggage line so that all of our people would know about it and have a look at it and be in a position to recommend it. If you aren't familiar with this fine line, I would suggest that you, too, have a look at it.

•

E. O. Cocke, vice president-sales, Trans World Airlines:

The best kind of luggage for air travelers should be of hard-sided construction and generally known as the "checkable" type of luggage. No matter how well made a piece of luggage is, if it is of the soft-side leather or other pliable material construction, it is bound to suffer a certain amount of damage in air travel because of the handling it gets on limousines, luggage carts, stowing and luggage compartments on planes, etc.

Cocke

Most manufacturers give the wrong impression to the traveling public in calling any lightweight luggage "airplane" luggage. Hard-sidedness and durability in luggage should not be sacrificed for lightness of weight for, after all, one carries luggage mainly to protect one's clothes and other contents. Two particular brands which seem to be the most durable and take the rigors of air travel most easily are the Hartmann *Skymate* luggage and the aluminum luggage manufactured by the Halliburton Company. As you probably know, these pieces are slightly heavier, but seem to stand up much better after long usage when traveling by air.

Of the cheaper brands of hard-sided luggage on the market, *Samsonite* seems to be outstanding in its field.

I agree that something constructive might be done in the luggage industry to educate the traveler in the use of hard-sided luggage for air travel. If this could be accomplished, it certainly would reduce some of our problems in luggage claims.

•

R. E. S. Deichler, vice president-sales, American Airlines:

We have not done any specific research work on the type of luggage that is best suited for air travel. Neither do we recommend specific brands or styles since a customer's needs can vary so much. However, any time we get a question of that type, we tell the patron to contact a reliable luggage dealer in order to get expert advice.

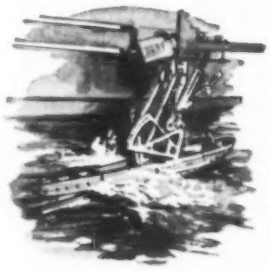
Bachrach
Deichler

In case you have not already made the contact, it is possible that the Luggage and Leather Goods Manufacturers of America, Inc., located here in New

From the Birthplace of Phantom Shapes

NEW WATER-BASED WEAPONS

Seaplane research is bringing new phantoms to life in Stevens Tech's towing tanks, testing ground for the U. S. Navy Marlin's advanced hull design.



Delicately instrumented models prove today's dreams for tomorrow's air-sea power at the Experimental Towing Tank, Stevens Institute of Technology.

AN instrument-covered seaplane model knifes through the waters of a Stevens Tech towing tank. A Naval Bureau of Aeronautics researcher pores over plans for a jet-powered, swept-wing flying boat. A Martin engineer makes dreams take wings on his drawing board. And, step by step, planes that combine water-based mobility with land-based speed come closer to reality!

Latest product of seaplane research teamwork, today's advanced Martin P5M-1 Marlins add new sinews to our Navy's anti-submarine forces. Their performance is in the tradition of the history-making Martin seaplane flight to Catalina in 1912, the famous Martin China Clipper, the dramatic rescues of Mariner patrol planes and the record-load-carrying Mars flying boats of World War II.

Today's seaplane research promises to make their jet-powered successors tomorrow even more potent weapons in America's arsenal! THE GLENN L. MARTIN COMPANY, Baltimore 3, Maryland.

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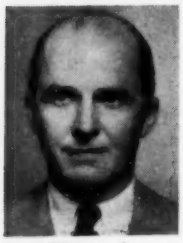
DEVELOPERS AND MANUFACTURERS OF: Navy P5M-1 Marlin seaplanes • Air Force B-57A Canberra night intruder bombers • Air Force B-61 Matador pilotless bombers • Navy P4M-1 Mercator patrol planes • Navy KDM-1 Plover target drones • Navy Viking high-altitude research rockets • Air Force XB-51 developmental tactical bomber • Martin airliners • Guided missiles • Electronic fire control & radar systems • **LEADERS IN** Building Air Power to Guard the Peace, Air Transport to Serve It.

York, could be of some assistance.

•

Willis G. Lipscomb, vice president-traffic and sales, Pan American World Airways:

I doubt that we can be very helpful in providing definitive answers to your questions. Generally speaking, I believe that various luggage manufacturers have endeavored to construct luggage that is designed to resist the careless handling to which baggage carried by air is subjected. Some progress appears to have been made, but so far the main objective has not been reached. Halliburton came pretty close to it with his all-metal luggage with which you are well acquainted. I understand that concern has gone out of business.



Lipscomb

It is not our policy to recommend specific manufacturers' luggage to prospective passengers. If inquiry is made by passengers, we are supposed to name several of the better known manufacturers of high class luggage designed for air travel. Additionally, we have found *Samsonite* stands up well under hard use and has the added advantage of being inexpensive.

I certainly concur with the thoughts expressed in the last paragraph of your letter that a constructive effort should be made in the industry in cooperation with the luggage industry in the design and manufacture of baggage that will withstand hard usage for a long period of time. Should not such a proposition be undertaken by the Air Transport Association?

•

T. M. Miller, vice president-traffic and sales, Chicago & Southern Air Lines:

We do not know of any research being made on the type of construction of luggage which will best stand air travel.

Miller

We do not recommend particular types of luggage because of durability or usefulness to air travelers. It seems that all types are subject to about the same rate of damage. At one time the *Samsonite* bag appeared to be the answer, but damaged *Samsonites* seem to be showing up more frequently and satisfactory repairs are very hard to make to this type of luggage. This is merely an observation and not a recommendation.

•

Walter Sternberg, vice president-sales, National Airlines:

I don't have a great deal to contribute in answer to your letter. The proper handling of luggage is a devil of a problem in everybody's airline. I do not know of any research being conducted on the type or construction of luggage by any airline or elsewhere. In better than 21 years of working for the air transport industry, I have tried all types of luggage. The leather ones chafe and tear; the "airplane luggage" type get holes punched through them, and the barracks bag canvas clothes carriers break a bottle of scotch.

Sternberg

At the present time, I am using a metal Halliburton bag and find that if you don't mind a few minor dents and occasional gobs of melted rubber or tar on the outside of your bag, it is by far the most satisfactory. My research on this type of bag has been limited to learning that I should not pack or unpack it on my wife's new bedspreads, because of the black stains the tar leaves on the spread and the Holy Ned I catch as a result of it.

I think that the aircraft engineers and manufacturers should share the responsibility with the airlines for damaging baggage. Sometime when you are around an airport, stick your head in the baggage door of a few super-super plush-interior modern planes; you will probably be shocked to see the jagged edges of metal, protruding screw heads, and similar diabolical devices for damaging baggage. The intra-company campaigns we wage to get our personnel to treat baggage gently are minute efforts compared to what could be done if the airlines, the manufacturers and the luggage people got their heads together and made a real effort to solve this serious problem.

•

Hugh W. Coburn, vice president-traffic and sales, Mid-Continent Airlines:

I am very sorry to say that I cannot give you any helpful information on luggage research. But certainly there would seem to be a need for such a project.

•

C. W. King, manager-customer service relations, Western Air Lines:

It has not been our practice, of course, to make any open recommendations concerning luggage types, except when passengers have made specific requests.

King

It has been my experience, in nearly six years of handling passenger claims for damaged baggage, that without question the Halliburton product is the most satisfactory for use on aircraft. Repair and damage claims for this type of baggage numbered less than half a dozen during the six-year period. Damages are easily repaired and very inexpensive.

Fine leather cases are most frequently scuffed and damaged, since the very nature of their construction will not withstand any but the most careful handling. We have found that the

How Claims Begin....

ONE AIRLINE traffic and sales executive, who preferred not to be identified, contributed the following four items which he believes are most responsible for damaged baggage. He says his observations are based "on bitter experience and the making of settlement claims":

- **Absence of separators** in luggage compartments of other than DC-6 type aircraft, and failure of DC-6 operators to use separators (i.e., folding shelves in baggage compartments to relieve weight on bags at bottom), resulting in terrific pressure on those cases at bottom of heap.
- **Dropping of cases** during loading, resulting in fracture of corners or entire body structure.
- **Seepage of water** or other liquids (frequently hydraulic fluid) into baggage compartments, resulting in permanent staining of all except metal cases.
- **Pulling of cases** out of belly bins on four-engined aircraft and out of rear compartment bins of DC-3's, resulting in sharp or rough edges of bin opening scraping and/or tearing the fabric.

Another Award to American Aviation for Editorial Excellence

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TO

AMERICAN AVIATION PUBLICATIONS

WAYNE W. PARRISH, Editor and Publisher

IN RECOGNITION OF THEIR OUTSTANDING AND CONSISTENT CONTRIBUTIONS TO THE PROGRESS OF AVIATION IN THE WEST

PRESENTED BY THE

AIR FORCE ASSOCIATION

CALIFORNIA WING, MARCH 1, 1952"

Here is additional proof of the high editorial standards and services offered to the subscribers of American Aviation magazine—by the world's largest aviation publishing house who also bring you: American Aviation Daily, Traffic News, Official Airline Guide and the American Aviation World-Wide Directory.

Samsonite products are generally wear-resistant, but in case of damage, cannot be repaired.

It is my personal opinion that Halliburton might well advertise their product, reduce their price, and to the great satisfaction of Western Air Lines, equip the flying public with their product. It would reduce our claims to a negligible quantity.

•

Laigh C. Parker, vice president-traffic and sales, Delta Air Lines:

So far as I have been able to determine, none of our people has knowledge of any research being conducted to determine the type of construction of luggage which will best stand up under air travel. I would think, however, that the manufacturers of this all-metal, aluminum appearing luggage and those who advertise "flight" luggage would have done something along that line.

Parker

We frequently receive claims for pilferage en route and, of course, these are tough in that we do not know whether or not the articles were ever actually in the case since locks can be picked. We do not, however, have any record of claims of pilferage ever having been submitted in connection with bags using "combination" locks. These locks have a minimum of three recessed rotary disks, the face only of which shows through three small square apertures.

•

Amos Culbert, vice president-sales, Northwest Airlines:

In response to your letter, neither myself nor apparently anyone in our company knows of any research being conducted on the type of luggage best prepared to stand up under air travel nor do we recommend any type of luggage to the air traveler. I certainly think that you have hit upon not only an excellent suggestion but also one that is an extremely "sore point" between the traveling public and the airlines.

Robert Six Reelected

Robert F. Six was re-elected president of Continental Air Lines for the fourteenth consecutive year, following annual meetings of the stockholders and board of directors of the airline in Denver recently.

BEECH'S T-36 cruises at over 300 mph, carries 10 passengers.

Executive Use Seen for Beech Trainer

T-36, when commercially available, will answer need for faster executive planes.

THE U. S. Air Force's T-36 trainer, also known as the Beech model 46, "seems to fill the bill in every respect as a first-rate executive aircraft," according to R. M. Harmon, chief design engineer of Beech Aircraft Corp.

Qualifying his comments with "if and when the commercial version is available," Harmon told the Washington Section of the Institute of the Aeronautical Sciences that the commercial Model 46 would cruise at well above 300 mph, have single-engine performance well above 13,000 feet and be able to operate from "the average improved runway found at cities of 50,000 population and up."

Powered by two 2400-hp Pratt & Whitney R-2800 engines, the Model 46 will be pressurized for flights from 20-40,000 feet, permitting it to fly above the weather. Standard fuel tankage will permit the Model 46, grossing over 25,000 pounds, to have a range of over 1,500 miles.

Faster Types Needed

Need for faster executive-type aircraft was stressed by Harmon, who noted that this type aircraft must be able to compete, timewise, with the scheduled airlines. Introduction of faster airline fleets dictates the need for faster executive aircraft. In the change-over, Harmon indicated, the executive aircraft operators may get aircraft more closely fitting their needs.

When the cruising speeds of airline aircraft go over 400 mph it may be practical to install pure jet or turboprop engines to keep the Model 36 on a competitive speed basis.

Harmon foresees the jet engine as answering the need for a small, four-place aircraft with twin-engine reliability, permitting all-weather operations and providing other advantages. Design of such a jet aircraft, capable of a top speed of 400 mph is just now becoming possible, Harmon said, but at today's prices and anticipated volume it would cost $85,000. Nonetheless, it is significant that, from an engineering standpoint, Beech's chief engineer feels such an aircraft is "very promising; we should like to start tomorrow."

Specifications

Specifications of Harmon's twin engine, four-place executive aircraft include:

Powerplants	2 turbojets rated at 850 pounds thrust each
Weight	5500 pounds
Useful load	1800 pounds
Payload	650 pounds
Top speed	400 mph
Cruising altitude	15,000 feet
Landing speed	85 mph
Miles per gallon	2 1/3
Range	400 miles plus 100 mile reserve.

Harmon placed considerable importance on the fact that the average pilot of light executive aircraft is not a professional pilot, one who wants to make flying a career. To this type pilot central location of twin engines would minimize the control problem and consequent pilot skill requirements in the event of engine-out operation. The jet engine would also serve as a source of pressurized air, permitting operation over the weather in many instances.

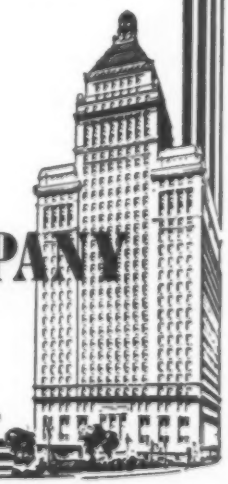
An Open Letter to the Scheduled Airlines of America

The recent series of accidents at the Newark Airport has gained national publicity because the accidents were spectacular and because they occurred in rapid sequence. You know and we know, from our long years of association with aviation, that the truth about flying is not in the spectacular but in the normal, in the hundreds of thousands of flights that are completed without incident. We have watched with interest the introduction of scores of new safety devices and improved operating procedures, and have been impressed by the care taken by you in training your personnel. We KNOW, both from this and from statistical evidence, that travel by scheduled airline is far safer today than it has ever been—many times safer, for example, than travel by private automobile.

We are not sure, however, that the public generally is possessed of the knowledge we have and we are not sure that a recounting of the statistics that prove the safety of flight on the scheduled airlines would be meaningful to that public. We know of only one way to prove that we have nothing but faith and confidence in your ability to carry those passengers safely. Therefore, effective immediately, we are doubling the amount of air trip accident insurance we will sell to passengers on the scheduled airlines. Heretofore the maximum trip accident insurance policy written by any insurance company has been $25,000 for $1.25. Henceforth twice this sum, $50,000 for $2.50, will be available through Continental to those who want it.

What do we think about the safety of the scheduled airlines of America? This is our answer.

America's No. 1 Accident and Sickness Insurance Company



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Four Accident Reports Released by CAB

Reports on 1951 cases cite errors in three; NWA crash in Washington remains unsolved.

PILOT error is cited as the probable cause of three out of four accidents in 1951's passenger-carrying operations reported on by the Civil Aeronautics Board earlier this month. The four accidents and the Board's summary of probable causes:

• **Northwest Airlines'** Martin 2-0-2 accident near Reardon, Washington, on January 16, 1951, which took the lives of seven passengers and three crew members: Probable cause—"sudden loss of control for reasons unknown, resulting in rapid descent to the ground."

• **United Air Lines'** Douglas DC-6B accident near Oakland, Calif., on August 24, 1951, which took the lives of 44 passengers and six crew members: Probable cause—"failure of the captain to adhere to instrument procedures in the Newark area during an approach to the Oakland Municipal Airport."

• **Pan American World Airways'** Convair 240 accident at Kingston, Jamaica, on Sept. 2, 1951, in which all 29 passengers and four crew members escaped without serious injury but the aircraft was demolished: Probable cause—"serious error in judgment and piloting technique on the part of the co-pilot and the failure of the captain to recognize the error and take over the controls in sufficient time to take corrective action."

• **Continental Charters, Inc.'s** Curtiss C-46A at Little Valley, New York, on December 29, 1951, which took the lives of 26 of the 40 persons on board: Probable cause—"the captain's poor judgment in attempting a flight by visual reference during instrument weather conditions."

In Trouble

The Northwest Airlines Martin 2-0-2 was flying Flight 115 enroute from Minneapolis to Seattle, Wash. Departing from Geiger Field, Spokane, after two uneventful planned stops, the NWA plane climbed to 6,000 feet on an IFR flight plan. Leveling off at 6,000 feet in four minutes time, the pilot asked for a clearance to Yakima, the next scheduled stop. While Spokane was checking on this clearance the flight broadcast an emergency message, some 15 seconds after the request for clearance.

This message was taken down by radio operators at Spokane and Yakima and recorded on magnetic tape by Aeronautical Radio, Inc.'s combined station. The first sentence was, "We are in trouble." The second sentence was not clear. The final sentence was, "Going down fast." The middle sentence was taken as "Plane gone nuts" by one recorder and as "Right engine haywire," by another. The other record was completely in doubt as to this sentence. Extensive study of the tape recording convinced the Board that this sentence was, "The wheel has gone nuts."

Low Altitude

The report on this accident provides an account of CAB's investigating methods. It discusses the manner in which attempts were made to determine the possibility of fire or explosion in flight, structural failure in flight, control system failure or malfunction, flutter, autopilot trouble, icing, and similar factors. For instance, CAB concluded that fire in flight was not a factor, although the aircraft experienced some fire following the impact, because the assembled wreckage failed to disclose any fire pattern which would have been consistent with a fire prior to disintegration of the aircraft.

The routine communications contact 15 seconds before the emergency contact established that the flight had been routine "until 30-90 seconds before the crash." Nonetheless, examination failed to disclose any evidence of structural failure and/or fire in flight. No reason for the known loss of control could be established.

The United Air Lines DC-6B, Flight 615, was enroute from Chicago to San Francisco. Operating on an IFR flight plan from Chicago via Denver, direct to Milford, Utah, and then to Oakland, the flight was conducted in a normal manner into the Oakland area. Cleared by approach control to the Oakland radio range station, the pilot requested clearance direct to Newark and a straight-in range approach. The Newark fan marker is on the southeast leg of the Oakland radio range. Both clearances advised the pilot to maintain 500 feet above the tops of the clouds.

Following additional contacts in which the pilot requested clearance for a straight-in ILS approach and then cancelled the request, the flight was cleared for a straight-in approach on the southeast course of the Oakland radio range from Newark at 0425. At 0427 the flight reported leaving Newark inbound to Oakland. Approximately one minute later the plane struck a hill about 26 feet below its crest. Speed at contact with the crest, 983 feet above mean sea level, was estimated at 225-240 mph. The main landing gear was extended but apparently the nose gear was still retracted.

All witnesses stated the aircraft was flying at low altitude in the Newark area and subsequent check flights indicated its altitude to be 1,500-2,000 feet prior to the final descent. The flight was cleared on an IFR flight plan, which meant a minimum altitude leaving Newark of 3,500 feet. The clearance had called for 500 feet above the clouds. The aircraft was neither 500 feet above clouds nor at 3,500 feet. Although cleared for a straight-in range approach to Oakland, neither the pilot's nor co-pilot's radio range receiver was tuned to the Oakland range.

The Board noted that had the flight been conducted in accordance with prescribed instrument procedures, this accident would not have occurred nor, had proper altitude been maintained, would terrain obstructions have been met. Position could have been fixed on the inbound heading by use of the Oakland radio range. Apparently no equipment failure was involved.

Misinterpretation

The investigation disclosed that a "500-on-top clearance" is interpreted by some pilots to mean 500 feet or more above the cloud tops without regard to the possibility that the resultant altitude might be less than the minimum prescribed IFR en route altitude. The 500-feet-on-top clearance given the UAL pilot, the CAB claimed, did not authorize him to operate at less than the 3,500-foot minimum en route clearance of that area. This interpretation has since been corrected among UAL pilots.

The Continental Charters plane was en route from Pittsburgh to Buffalo, N. Y., when it crashed five miles southwest of Little Valley, N. Y. Passengers originally scheduled to be picked up in Pittsburgh on the southbound trip from Buffalo had been taken on en route to Buffalo to permit a non-stop Buffalo-Miami flight. The Curtiss C-46A aircraft had flown Miami-Pittsburgh non-stop.

On arrival at Pittsburgh no fuel was added, apparently "to save time," nor is there any record that the fuel

tanks were checked with a dip stick to determine their supply, as required. The plane had departed Miami with about 1100 gallons of fuel. The VFR flight plan filed in Pittsburgh stated the aircraft had three hours of fuel, or 450 gallons, on board. The weight and balance form indicated 400 gallons on board, and also listed the flight as being IFR, following an airway that didn't exist in the area and showing an incorrect list of the number of seats occupied.

The crew members made no attempt to check Pittsburgh-Buffalo weather with the Flight Advisory Weather Service but when one member phoned in a VFR flight plan the CAA communicator volunteered information that weather did not appear suitable for a VFR flight.

Reports from many people who saw the aircraft indicated the C-46 was operating "very low" and "exceptionally low," low enough for one witness to distinguish the lighted cabin windows despite foggy conditions. CAA manuals classify this area as mountainous and require an altitude of not less than 2,000 feet above the highest point within a horizontal distance of five miles.

Furthermore, Continental Charters' own instructions, issued only five days prior to the accident, called for IFR flight plans for all night flights.

The plane crashed 38 minutes after take-off from Pittsburgh, 100 feet below the crest of a hill, at 2,375 feet m.s.l., in level flight. Conditions at the time of the accident were "almost zero ceiling and visibility."

Simpler Border Flights OK'd by U.S., Canada

Arrangements to facilitate the operation of non-scheduled commercial air services across the U. S. and Canadian borders have been completed by the Civil Aeronautics Board and the Canadian Air Transport Board, effective April 12. The two boards will hold concurrent proceedings at periodic intervals to deal with authorization applications.

Permits will be issued for three-year periods, the CAB states, and will apply to operations "of a casual, occasional or infrequent" nature. Both large and small Alaskan air carriers will benefit from the simplification procedures. Similar benefits will be available to carriers based in continental U. S., although only small aircraft, having disposable loads of not greater than 2,000 pounds, will be authorized to operate over routes of licensed scheduled carriers.

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LOCKHEED T-33 TRAINER POWERED BY ALLISON J33 TURBO-JET (Also F-80 Shooting Star)

NORTHROP F-89 SCORPION POWERED BY TWO ALLISON J35 TURBO-JETS WITH AFTERBURNERS

GRUMMAN F9F-3 PANTHER POWERED BY ALLISON J33 TURBO-JET

REPUBLIC F-84 THUNDERJET POWERED BY ALLISON J35 TURBO-JET

LOCKHEED F-94 ALL-WEATHER FIGHTER POWERED BY ALLISON J33 TURBO-JET WITH AFTERBURNER

DOUGLAS A2D SKYSHARK POWERED BY ALLISON T40 TURBO-PROP

NORTH AMERICAN XA2J-1 SAVAGE POWERED BY ALLISON T40 TURBO-PROP

CONSOLIDATED P5Y FLYING BOAT POWERED BY FOUR ALLISON T40 TURBO-PROPS

Around the world ALLISON JET ENGINES have accumulated more than 1,300,000 hours in the air

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Builders of J35 Axial, J33 Centrifugal Flow Turbo-Jet Engines, T38 and T40 Turbo-Prop Engines

Maintenance Bulletin Board

RETRACTABLE TAIL WHEEL has been installed on a Standard Oil Company DC-3 by Grand Central Aircraft Co., Glendale, Calif. Here Edward Cain, co-pilot of the Standard Oil plane, and Frank Bouslough, of GCA, are shown examining the installation.

New Plating Process Saves Props from Spray

A new means of protecting seaplane propellers from the effect of salt spray has been jointly announced by the Hamilton Standard Division of United Aircraft Corp. and Bart Laboratories. The new process, called "Alni-Clad," solves a major problem in coating aluminum with nickel to give a stress-free, hard, yet resilient coating.

A synthetic rubber compound developed by Hamilton is used to establish a bond between the aluminum and nickel plate. The bond between the organic synthetic base and the nickel has an extremely high adhesion or tensile strength, which will stand up under a wide range of temperatures. After the bond materials are sprayed onto the aluminum component to the required thickness, they are dried. The piece is then plated with nickel by conventional means. With current operational facilities the new process can be completed in about 24 hours.

According to Erle Martin, general manager of Hamilton Standard, "Alni-Clad" is of major importance in protecting duralumin propeller blades from the pitting and eroding effect of spray thrown up in sea landings and take offs. Solid duralumin propeller blades equipped with the coating already are in service on the Navy's Martin P5M-1 flying boats and Grumman UF-1 utility amphibians. Several hundred service landings and take-offs have been made during tests.

CAP Switches to Hydraulic Wipers

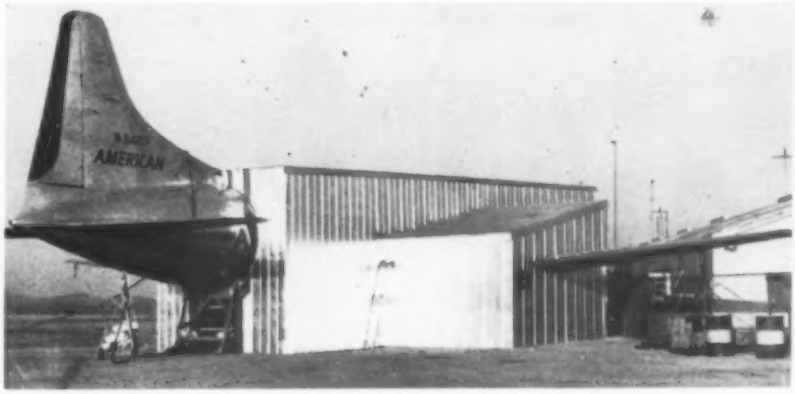
Capital Airlines has switched from electric to hydraulic windshield wipers on its Lockheed 049 Constellations and a number of other airlines have expressed interest in the conversion which eliminated many of the maintenance and operational difficulties posed by the electric unit. The modification was made at a cost of about $350 per airplane.

Over-sensitive

The Marquette Metal Products electric wiper, part number 22 V5E, was found by Capital to be over-sensitive to adjustment. Normal handling by maintenance men was not adequate to keep it operational. Also, two mechanical shafts in the unit were breaking. This prompted the decision to change over and the Alco hydraulic wiper was selected to replace the Marquette unit. The wiper is made by Alco, of St. Louis, Mo.

The change over to the Alcoa unit was made without any weight penalty, Capital reports, and only about 28-man-hours labor was required per aircraft to complete the work. Not all of the obsoleted Marquette parts are lost since some interchangeability exists between the components.

Capital did not make the change on the L-749 Constellations now being converted by KLM Royal Dutch Airlines prior to delivery to Capital but indications are that these may be converted at a later date.



MODERN HENHOUSE or hangar is the logical question posed by this strange structure. Actually it is a temporary shelter built by American Airlines at Charleston, West Virginia, to handle repairs to one of the Convair 240 fleet following damage experienced when the nosewheel collapsed. No regular hangar facilities were available.

AGAIN EASTERN AIR LINES SELECTS

for New Super Constellations...

Upholstery, carpeting, and draperies of Goodall Fabrics add distinction to Eastern's new 88-seat Super Constellations by Lockheed.

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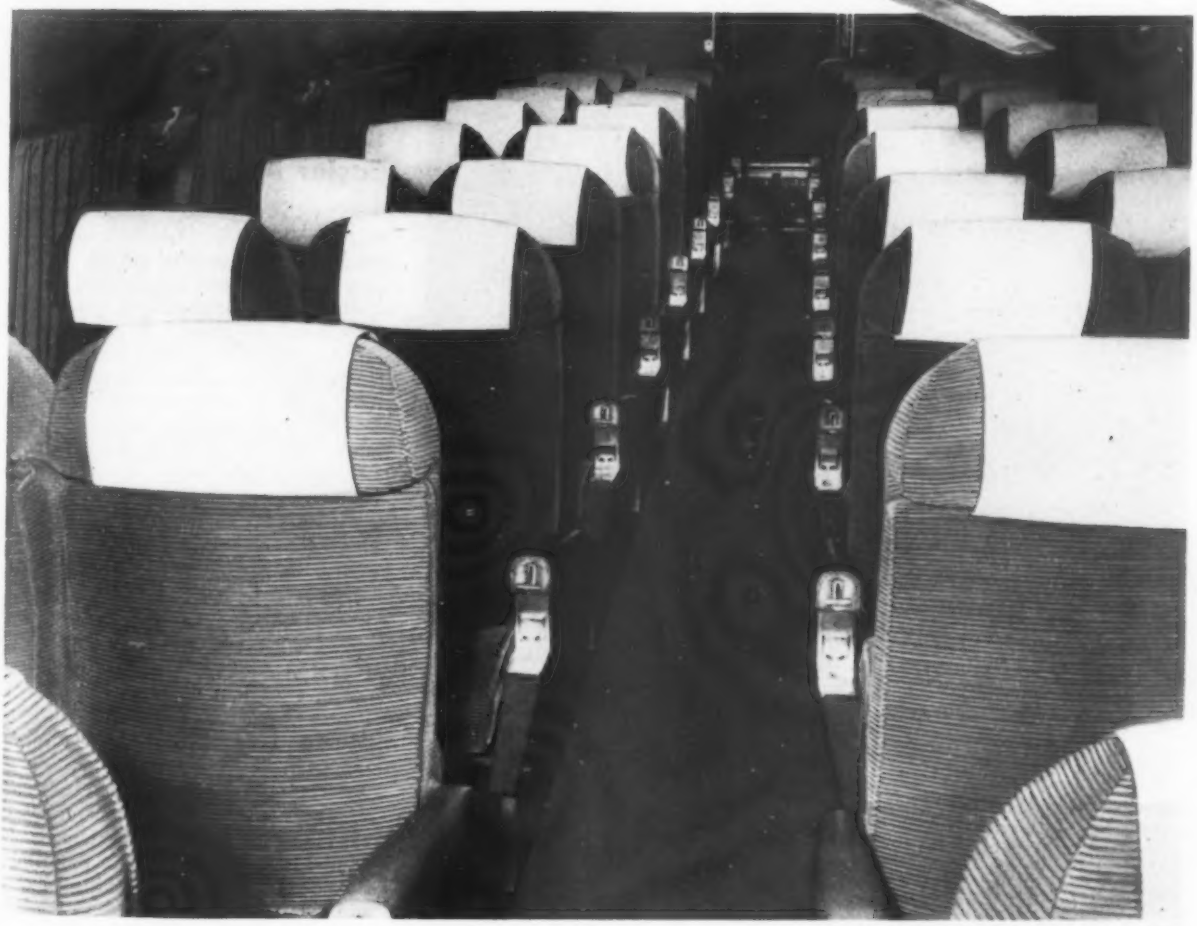
GOODALL FABRICS, INC. • NEW YORK • BOSTON • CHICAGO • DETROIT • SAN FRANCISCO • LOS ANGELES

GOODALL *Blended-to-Perform* FABRICS

...for New Silver Falcons



The interior of one of Eastern's new Silver Falcons shows the richness and harmony of a 100% Goodall Fabrics installation.

AIR LINES requirements are blended into Goodall Fabrics! Year after year the results of Goodall's experience with transportation fabrics has helped Eastern maintain its outstanding record of performance and economical operation. Like many other air lines, Eastern has proved through constant use that Goodall Fabrics give major advantages, such as: durability with minimum weight ...easy maintenance...lasting beauty of color and texture.

Goodall-fabrics

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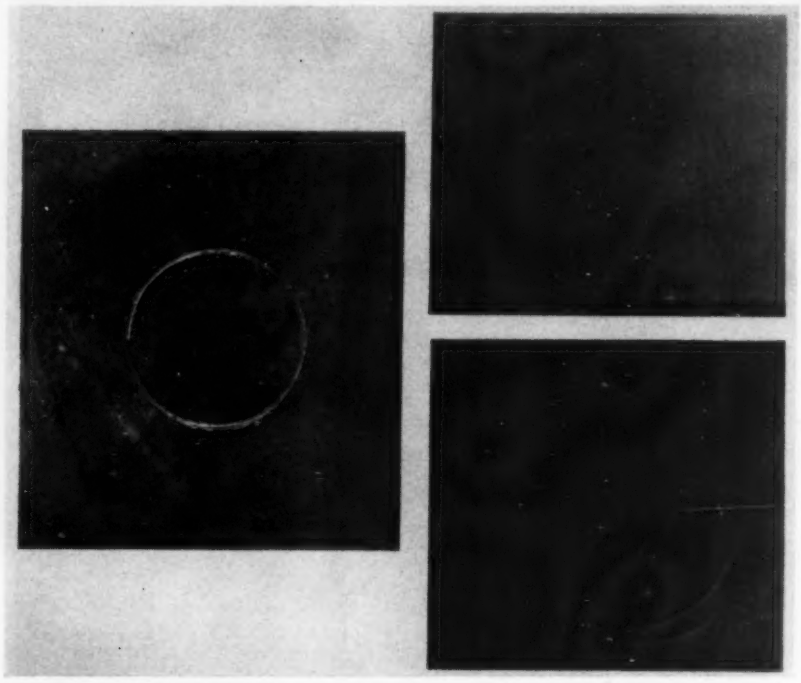
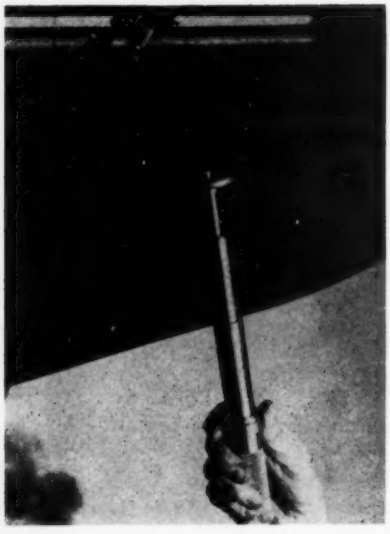
Double-Pane Windows Cut Noise Level

The augmentor tube extensions installed on many Convair Liners early in their service life, to reduce engine exhaust noise in the cabin, are now being removed by American Airlines. Installation of double-paned passenger windows in the cabin has improved the noise level enough to justify their removal, according to AA. Tests run by Consolidated Vultee Aircraft Corp. and AA have shown that this change can be made without appreciably changing the anti-icing characteristics of the aircraft.

This change, which will also require replacing the aluminum augmentor troughs with stainless steel troughs, is being made at American during routine engine changes at its Tulsa overhaul shops. American has cautioned its maintenance personnel that extensions should be removed on both sides simultaneously because of possible tail buffeting effects and general appearance.





LATEST VERSION OF CAA's fabric tester (left), now in use at the Technical Development and Evaluation Center at Indianapolis, indicates whether the doped airplane fabric covering has deteriorated and thus become weak or whether the dope has become embrittled.

A small blunt pin is thrust against the fabric by an automatically controlled hammer blow, but only non-airworthy fabric or embrittled dope is penetrated. Photo at left, above, shows a piece of fabric subjected to 100 tests which remained untouched because the covering met requirements. Other photos show unsatisfactory punched fabric and indications of embrittled dope.

Compass Swinging Easier At Tempco

Two new gadgets in use at Texas Engineering and Manufacturing Co., Inc., in Dallas simplify the job of compass swinging on Douglas DC-4 aircraft. The first unit, designed by Temco inspector J. E. Surratt, Jr., is a spacer bar assembly (see photo) which fits in the nose wheel scissor and permits the nose wheel to swing with full travel on one side and only five degrees on the other. This is used in combination with a sighting tube which is used until definite sights are made which align with compass rose markings.

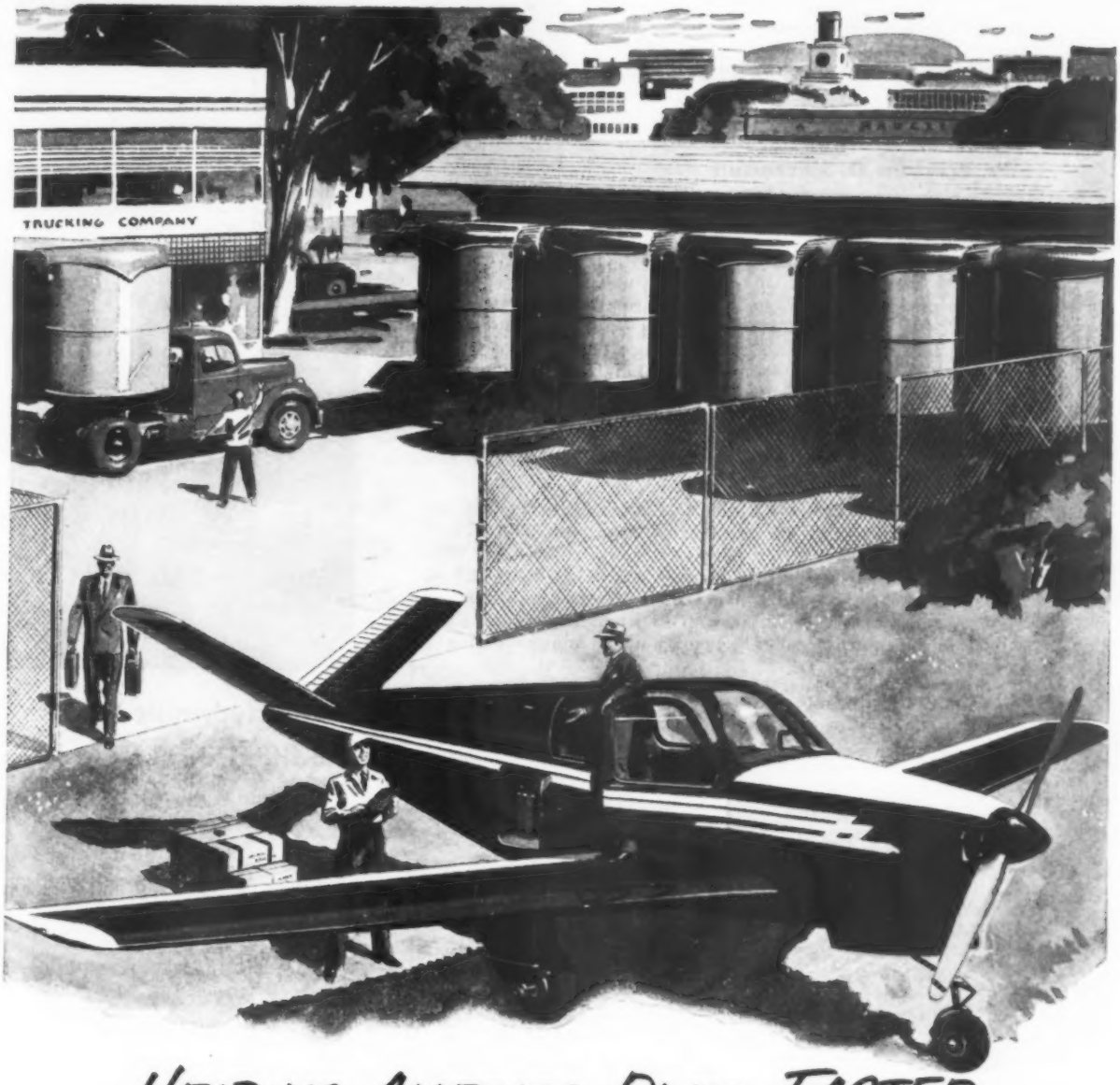
Using this system, the man in the cockpit in the pilot's seat taxis the aircraft onto the compass rose, positions the left main gear on the plate and swings the nose wheel around, without ground assistance except during the initial setting up. As the aircraft is turned, the man in the cockpit can sight through the tube to check with prealigned compass rose markings.

The spacer bar attachment has made it possible to taxi in and out of places where a tow tug would normally be required. All told there is a more than 50% reduction in required manhours and engine operating time using the new method, Temco states.

Silent Cable Developed

An instrument cable free of spurious electrical signals due to mechanical shock and vibration has been developed by Dr. T. A. Perls of the National Bureau of Standards, Office of Basic Instrumentation.

Described in Technical Report 164, the noise-free cable development is the result of a recent study of spurious cable signals carried out by NBS under Department of Defense and Atomic Energy Commission sponsorship.



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Company-owned Beechcrafts help keep wheels turning in the trucking and transportation industries. Key men have complete mobility of action. Because their travel time is slashed as much as 75%, they have more time for the home office, more time for field trips, too.

Name *any* American industry — and there you'll find Beechcrafts. Faced with today's double job of building defense production and keeping up the flow of consumer goods, executives find Beechcraft ownership more valuable (and profitable) than ever. Investigate. Call your Beechcraft distributor. Or write Beech Aircraft Corporation, Wichita, Kansas, U.S.A.

Beechcraft

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

Extra Section

By William D. Perreault

A FEW FACTS on Pan American World Airways' aircraft tire usage were routed across the desk this week. It seems PAA wears out more than 3,000 tires a year at costs ranging from $75 to $315 each, wholesale. On the Convairs, with small, high-pressure tires, this means a tire change every 300 landings, while on the larger, low-pressure tires of the Constellation and Douglas DC-4, 385 landings per tire are in order. PAA recaps its tires an average of twice before scrapping them. Landings per tire are cut almost in half at one South American airport which is surfaced with pebbles. Rubber cost per landing ranges from 85c to $3.50 on various PAA aircraft types.

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Repeated reminders that the jet age in commercial aviation is not far away keep our interest in jet operational statistics keyed up. From Lockheed comes a statement that an Air Force record for jet flight time was established by an F-80C which in January logged 142 hours and 45 minutes flight time for the month. The F-80C concerned was based at Nellis AFB, Las Vegas, Nev. A Lockheed T-33 jet trainer operating out of Hamilton AFB, Calif., logged 125 hours and 45 minutes during a recent 30-day period.

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Do the markings of foreign-registry aircraft confuse you as they do us? If so, you'll find the plastic identification card now available from Vickers, Inc., at 1451 Oakman Boulevard, Detroit 32, Mich., of value and interest. The wallet-size Vickers card carries a list of aircraft identifications with respective countries of registration on one side and an alphabetical list of countries with the respective identification codes on the other. It is available free to meet individual requests. We think it's a worthwhile gimmick.

•

Newspapers in Philadelphia recently reported that weighing-in for airline flights was costing 1c per person at North Philadelphia Airport. Seems this airport is not normally used by the airlines. When flights were scheduled out of there recently no regular scales were available for checking baggage and the airlines were providing the pennies with which to weigh each item. Our figures show that the domestic trunk airlines carried 21,289,527 passengers in 1951. Seems as though the weighing scales would represent a good concession around airline terminals.

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An average of 15 pilots and copilots were lost each year due to flying accidents in the period 1946-50 out of an average number of 6,815 pilot employees, according to the Flight Safety Foundation. This equals an accident death rate of one for every 454 pilots per year, or 2.2 per 1,000 pilots, and contrasts with a rate of .59 per 1,000 persons in the U. S. due to all types of accidents. Present death rate of women in childbirth in the U. S. is about one per 1,000, the FSF adds, as contrasted with 6.2 per 1,000 in 1933. Accidental deaths in coal mining in 1951 averaged 1.91 per 1,000 workers.

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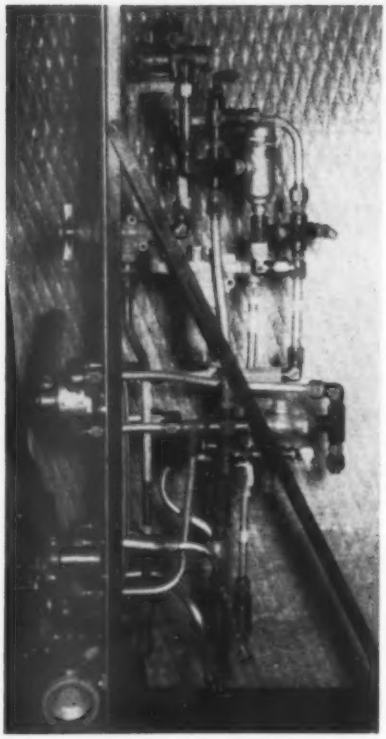
A survey of 350 industrial companies employing 50,000 engineers has shown that an estimated 60% of the potential managerial talent of engineers is being lost to the industry today. Only 34% of the companies studied, the National Society of Professional Engineers reports, have any planned program of information and indoctrination to prepare engineers for future management leadership. The first in a series of research surveys to be published by the SPE, "How to Improve Engineering-Management Communications," is available at $2 per copy at 1121 Fifteenth St., N.W., Washington 5, D. C.



DC-3 Hydraulic System Modified by SA

Southern Airways is modifying the hydraulic system of its Douglas DC-3 aircraft by eliminating the engine selector valve, replacing the Douglas pressure regulator with a Bendix regulator (part number 404906-0-1), replacing all AC fittings and valves with AN units and standardizing the panel so that it can be built up on a bench mounted jig.

Standardization of the panels has made it possible for the first time, in SA's case, to have complete interchangeability between panels. The panel is assembled in the jig, tested as a complete assembly and can be installed in the aircraft in short order. Individual component changes can now be made without removing any other part of the panel. Change from AC to AN fittings and valves was made to simplify procurement problems.

When the engine selector is removed check valves are installed in the interconnected lines through the Bendix regulator. This assures reserve hydraulic pressure in the accumulator at all times, normal or single engine operation, and system pressure remains normal even while being subjected to heavy loads, such as lowering the landing gear. Both pumps normally supply the system with this arrangement, assuring faster flap and gear operation.

PAC PRESSURIZATION & TEMPERATURE CONTROL UNITS....

Are Known by the Company They Keep!

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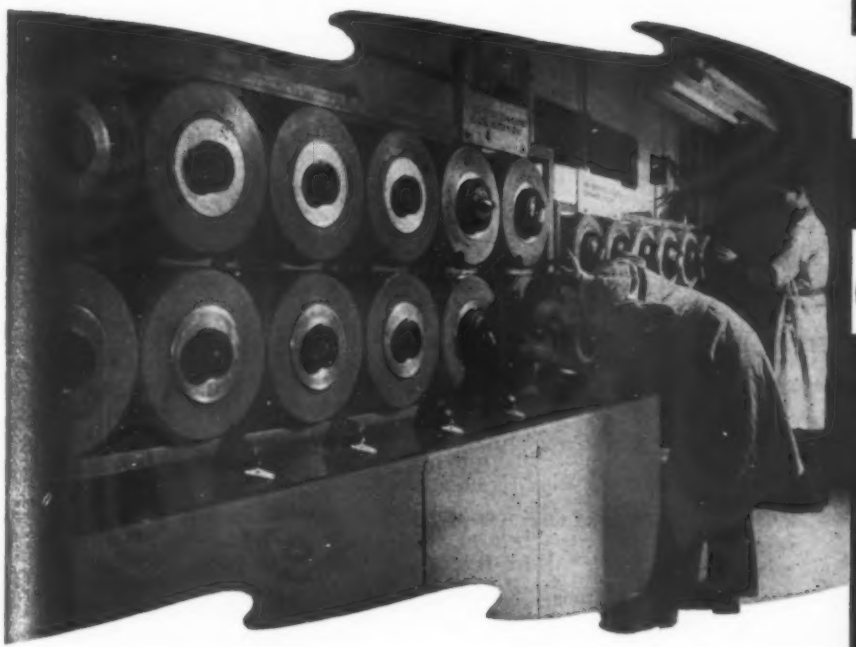
- Aviation Supply Office
- Avro of Canada
- Bell Aircraft
- Boeing
- Brooks & Perkins
- Canadair
- Convair
- Dalmo-Victor
- Douglas
- General Electric
- Godfrey Engineering Co. Ltd.
- Hamilton Standard
- Lockheed
- McDonnel Aircraft
- North American
- Northrop
- Solar
- Stratos Division
- Temco



PACIFIC AIRMOTIVE CORPORATION

MANUFACTURING DIVISION

From Jennies to Jets since 1928

PAC

ESTABLISHED 1928

ENGINE OVERHAUL

PAC's engine and accessory overhaul shops have been servicing airlines, corporations and private customers for 24 years.

AIRFRAME OVERHAUL

PAC's 24 year dependable service record is unequaled. With over one million sq. ft. and thirty depts. to serve commercial and military aircraft.

MANUFACTURING

Specialized personnel and facilities for engineering and development of Pressurization and Temperature Control Equipment. Standard equipment on 90% of all jet aircraft.

PARTS—SALES & SERVICE

Distributors for the leading aircraft parts manufacturers for 24 years — servicing customers all over the world.

PACIFIC AIRMOTIVE CORP.

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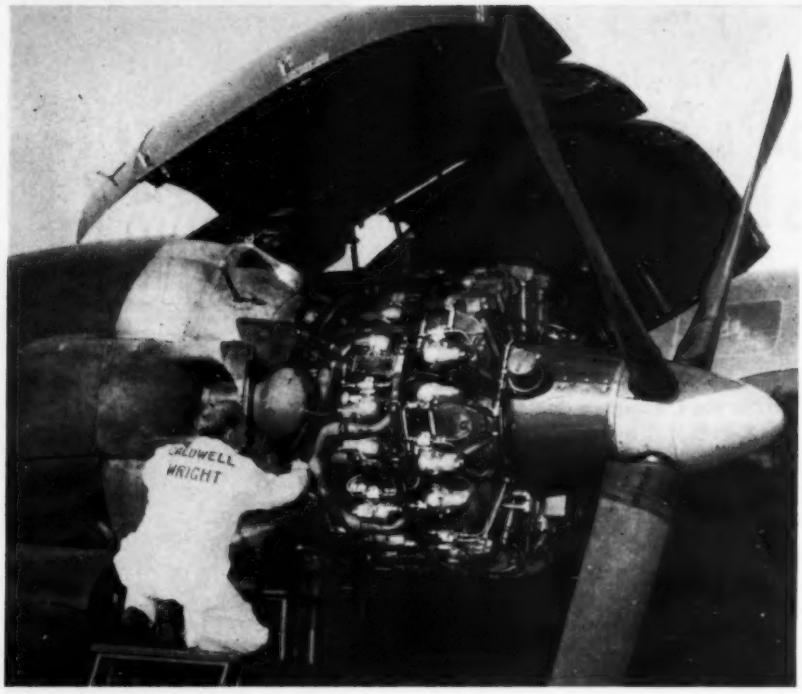


RARE VIEW of the Wright R-3350 Turbo Compound engine, the engine which will power the Lockheed L-1049C Super Constellations and Douglas DC-7's, is provided in this photo of a mechanic checking a Lockheed P2V.

MODIFIED TABLE OF DIMENSIONAL UNITS

Dimensions	ICAO Table of Units	Blue Table
Distances	Nautical miles and tenths	Nautical miles and tenths
Altitudes, heights, elevations and dimensions on aerodromes and short distances	Metres	Feet
Horizontal speed	Knots	Knots
Vertical speed	Metres per second	Feet per minute
Wind speed	Knots	Knots
Wind direction for landing and taking-off	Degrees magnetic	Degrees magnetic
Wind direction for all other purposes	Degrees true	Degrees true
Cloud altitude and height	Metres	Feet
Visibility	Kilometres (or metres)	Nautical miles (or yards)
Altimeter setting	Millibars	Millibars
Temperature	Centigrade	Centigrade
Weight	Kilogrammes	Lbs.
Time	Hours and minutes, the day of 24 hours beginning at midnight, Greenwich mean time	Hours and minutes, the day of 24 hours beginning at midnight, Greenwich mean time

ONLY TWO TABLES of dimensional units are to be used throughout the world in all communications between aircraft in flight and ground stations, effective September, 1952. This is the second phase of the International Civil Aviation Organization campaign to eventually standardize all units.

Tropical MATS Planes To Be White Topped

Military Air Transport Service aircraft soon will have a coat of white, solar-resistant lacquer on cabin roof exteriors. Approval from the Air Materiel Command calls for coating all transport planes assigned to, or operated through, tropical areas. Since nearly all MATS transports are routed through these areas, the approval will affect most of them. The operation will be conducted on a gradual basis, with each plane being painted as it leaves the factory responsible for cycle-reconditioning the aircraft.

Navigation Aids on BEA

British European Airways will be the first operator to adopt the Decca Navigator and Flight Log in the air. The carrier's entire fleet, including the turbo prop Viscounts, Ambassadors, and helicopters, is being fitted with the automatic airborne navigator, heretofore used at sea by over 1,000 ships.

Use of the Decca Flight Log, which automatically shows the pilot the ground position of his aircraft on a map, is expected to grow as more and more Decca ground stations are built. Chains of such stations are now working in Britain, Scandinavia, and Germany and others are being built in France and other parts of Europe. ICAO is currently evaluating the system for world-wide use.

Decca also has designed a cheaper and simpler set of ground stations called the Integrated Track Range for use over land areas where there is insufficient air traffic to justify setting up a full chain. The estimated cost is about one-third that of a full chain. A pilot carrying the Navigator and flying from Decca Chain coverage into one of the ITR areas would still be able to check his track.

New Overhaul Contract Routines Set Up in AMC

Air Materiel Command is establishing new procedures for administration and maintenance and overhaul contracts. Although contracts will continue to be let by the procurement branch, subsequent administration is being transferred to Air Materiel Areas.

Pacific Airmotive Corp.'s overhaul of Douglas C-54's for MATS and Grand Central Aircraft Co.'s overhaul of Pratt & Whitney R-1830 engines are two contracts currently in the process of being moved from the Western Procurement District in Los Angeles to the Norton Air Force Base depot at San Bernardino.

The new Collins 51R-3 VOR receiver

The leader in VOR Leads again!

It was 1946 when Arinc tossed the omnirange ball into the radio industry's court. Collins has been throwing baskets ever since.

First demonstrations of the Collins 51R airborne VOR receiver and instrumentation were made in January, 1947, for Arinc, commercial airlines engineers, and the Air Transport Association's research group. Collins designs were approved.

Within a year, orders for 51R equipment were received from American, Chicago & Southern, Northwest, Pan American and United. Since then almost every leading airline of the United States (and, most recently, Air France), as well as many users of executive aircraft, have adopted the 51R as standard.

Collins has earned and is widely accorded the leadership in the VOR field and today, by a wide margin, is the largest producer of airborne VOR receivers and accessories.

The 51R research-engineering team has never stopped playing ball — studying users' servicing and performance reports — engineering refinements and incorporating them in 51R design. The 51R-2 was a prime example of the value of this continuing effort toward the ultimate.

We now announce the 51R-3, which represents the latest advances in performance and ease of servicing.

In general, the changes include, a: greatly improved stability over wider ranges of temperature and climatic conditions, and b: potentiometer type adjustments for all major instrument circuits, and component location changes which save much bench test time.

There is a 51R-3 illustrated descriptive bulletin waiting for you. Please ask us for it on your business letterhead.

In radio navigation equipment, it's . . .

COLLINS

COLLINS RADIO COMPANY, Cedar Rapids, Iowa

11 W. 42nd St., NEW YORK 18 **1937 Irving Blvd., DALLAS 2** **2700 W. Olive Ave., BURBANK**

Fifteen years ago... in our first year of publication...

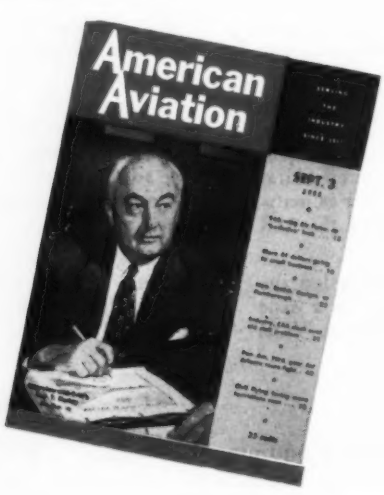
IN THE AIR -- IT'S CONVAIR®
REG. U.S. PAT. OFF.

ran its first advertisement in American Aviation Magazine. We've both come a long way since then, and today Convair continues its advertising messages in American Aviation on a consistent schedule. We're proud of this experience-proven confidence.

The most important companies in aviation, who know and have grown with this great industry, advertise consistently in the most important magazine in aviation . . .

Integrity

Influence



New Eyeglass, Coating Aid in Night Flying

A new type of eyeglass for night-flying pilots with small correctible eye defects is being perfected by Lt. Wayne E. Gulley, optical researcher at the Air Force School of Aviation Medicine.

The lenses of the night-flying spectacles are coated with magnesium fluoride, which reduces the 8% of light reflected from each ordinary lens to 4% or less. Research on the problem of making soft metallic coating permanent is continuing, since it wears off after five or six months and the lenses must be cleaned and recoated.

Weather Maps Sped by Facsimile Transmitters

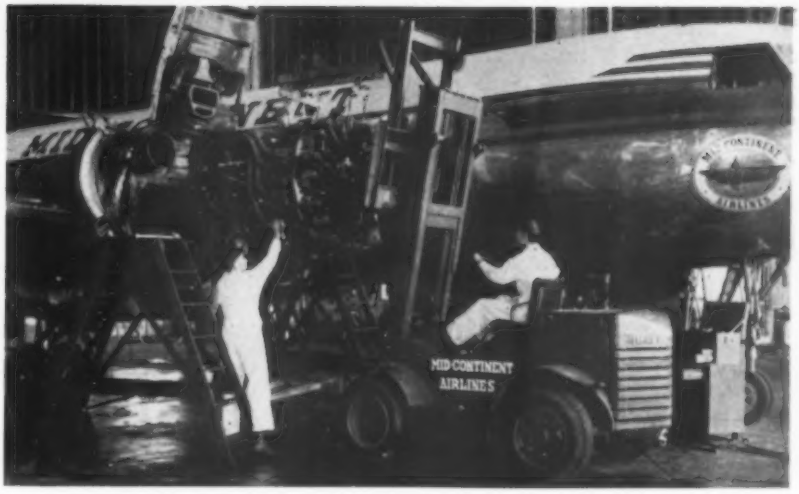
United Air Lines now has facsimile in use at six flight dispatch offices, including New York, Newark, Chicago, Seattle, Los Angeles, and San Francisco, to provide pilots with up-to-the-minute information on winds and weather.

Prepared at Weather Bureau-Air Force-Navy headquarters in Washington, charts of winds aloft and surface weather are transmitted by wire and reproduced on fax recorders 24 hours a day. Of more than 50 charts received daily, United's pilots and meteorologists primarily are interested in the analysis and forecasting of upper winds and surface weather.

Forecasts of winds at various altitudes are flashed six times daily. Surface weather is predicted twice each day for the ensuing 30 hours, five times weekly for ensuing 54 hours, and twice weekly for ensuing 144 hours.

A fax recorder turns out a 12-by-18 inch chart in about 20 minutes. Being used exactly as they come from the recorder, some of the charts are posted for pilot's flight planning, while others are used to supplement upper-air charts drawn by United's meteorologists.

ENGINE CHANGES ARE being speeded up at Mid-Continent Airlines' base at Wold-Chamberlain Field, Minneapolis/St. Paul, by use of a Ross Model 6-P fork lift truck. The unit has a 6,000-pound capacity in its hydraulically operated lift.



New Fuel Reserve Limit Approved by IATA

A new policy on fuel and oil requirements to replace the present recommendation for 45-minute fuel reserves was approved by the International Air Transport Technical Committee at its meeting in Madrid. Under its terms, these requirements should be determined by the operator on the basis of the particular considerations affecting each flight. Because of the differences in transport aircraft now in operation, the imminent introduction of turbine planes, and wide divergencies in world operating conditions, it was felt that the 45-minute requirement was now unrealistic.

Based on recommendations of a special working group which studied existing European situations, the Technical Committee also approved policy attitudes on various short-range navigational aids as a guide to IATA observers including the following:

• **VHF Omnirange** should be installed at regular and alternate international airports and routes where operational requirements dictate the use of short-distance navigation aid featuring selective tracking and static-free reception, or where VOR, either alone or in conjunction with other systems, can most adequately meet agreed operational requirements in the area concerned.

• **Withdrawal of MF** direction-finding from areas where improved radio aids have been installed and found satisfactory should not be opposed by IATA.

• **VHF direction-finding** equipment should be so set up that it could also serve as a let-down aid, unless other operational applications demand otherwise.

• **Continued operation of GEE** chains should be supported—though no new installations should be recommended—until such time as they are functionally replaced by an ICAO-approved aid over EUM region.

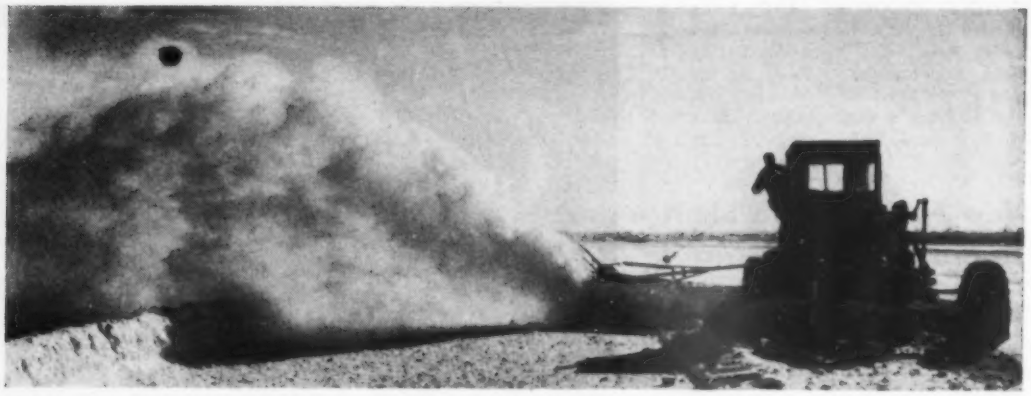
• **Installation of ground radar** should be supported in conjunction with navigational aids provided in terminal areas where traffic density is high or converging routes create traffic control problems.

• **Visual aural range,** two-course version of VOR, should be used where it can meet less stringent operational requirements in a particular location.

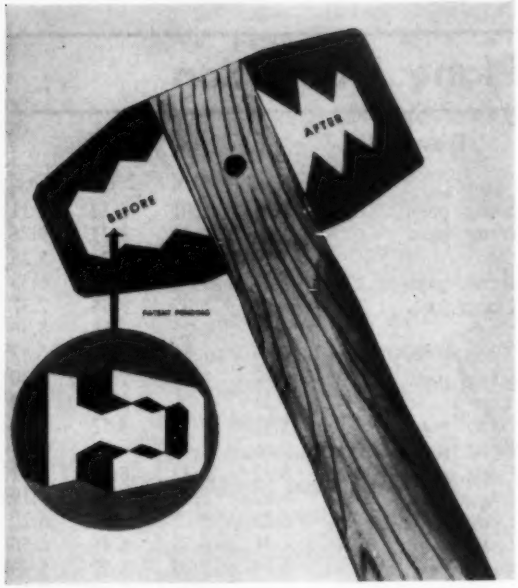
Daily Plane Utilization

Domestic

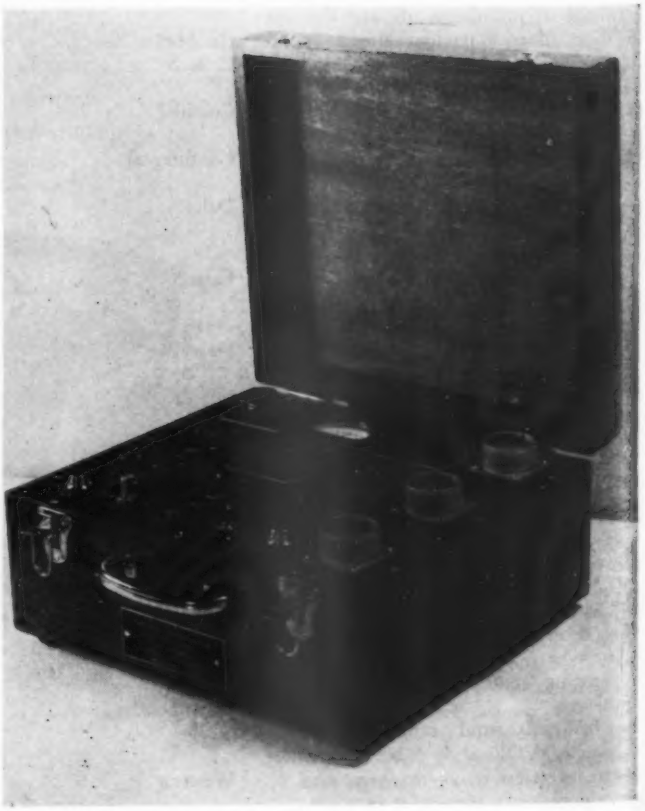
		Sept.	Oct.	Nov.	Dec.
American	2 eng. pass.	6:04	6:01	5:32	5:11
	4 eng. pass.	9:40	9:49	9:23	9:26
	cargo	4:15	5:04	4:24	5:28
Braniff	2 eng. pass.	7:28	7:23	7:19	6:53
	4 eng. pass.	8:07	8:07	7:53	7:37
	cargo	7:44	6:23	7:18	5:46
Capital	2 eng. pass.	7:35	7:31	7:07	6:47
	4 eng. pass.	8:37	8:22	7:45	7:30
	cargo	2:18	3:01	2:58	4:35
Caribbean	2 eng. pass.	3:45	3:39	3:52	4:16
C & S	2 eng. pass.	9:14	9:23	9:18	8:59
	4 eng. pass.	8:32	8:32	8:33	8:22
Colonial	2 eng. pass.	8:02	7:19	7:12	6:19
	4 eng. pass.	6:20	6:02	6:01	6:20
Continental	2 eng. pass.	6:38	6:33	6:46	6:56
	4 eng. pass.	5:33	5:27	5:27	5:33
Delta	2 eng. pass.	7:30	7:46	7:35	7:34
	4 eng. pass.	8:58	8:15	7:48	8:23
	cargo	6:08	6:31	6:46	6:30
Eastern	2 eng. pass.	9:38	10:51	10:35	9:49
	4 eng. pass.	9:28	9:26	10:15	10:52
	cargo	....	....	1:50	2:54
Hawaiian	2 eng. pass.	4:51	5:06	4:43	4:58
	cargo	3:13	3:07	3:10	3:31
Inland	2 eng. pass.	10:04	10:27	10:12	10:01
	4 eng. pass.	6:56	6:47	6:39	6:10
MCA	2 eng. pass.	6:07	6:09	5:51	5:56
National	2 eng. pass.	7:04	7:07	7:16	7:28
	4 eng. pass.	9:44	9:22	9:54	10:03
	cargo	4:07	6:04	5:41	5:03
Northeast	2 eng. pass.	7:41	6:37	6:26	6:16
Northwest	2 eng. pass.	8:15	6:57	4:58	3:05
	4 eng. pass.	8:45	7:43	7:19	6:57
Trans Pac.	2 eng. pass.	6:08	6:13	6:12	6:22
TWA	2 eng. pass.	5:58	6:17	6:06	5:13
	4 eng. pass.	7:32	7:50	7:25	7:28
	cargo	3:29	4:30	5:05	5:11
United	2 eng. pass.	6:55	5:57	5:59	5:04
	4 eng. pass.	8:13	8:31	8:01	7:35
	cargo	4:52	5:31	5:46	3:58
Western	2 eng. pass.	7:35	7:38	7:31	7:23
	4 eng. pass.	8:31	8:13	5:55	6:44



SNOW BLOWER, described by Peoria (Ill.) Airport Manager Dewitt Collins as "very satisfactory," has been instrumental in keeping the Peoria airport open this winter. Developed by Ulrich Products Corp., Roanoke, Ill., and called Domor Snow Blower, the device was attached to a Caterpillar motor grader. The blower, a 48-inch propeller driven through a disc-clutch by a power take-off, is fastened to the end of the snow wing on the grader. The blade spins at a speed of 500 rpm, throwing snow some 50 feet from the machine as it is fed in from the blade. An 18-foot swath is cleared on each pass. The attachment is sold by Caterpillar dealers.



"FLEX-FLO" construction used by Custanite Corp., Larchmont, N. Y., in a new safety hammer produces a malleable metal hammer having hollow chambers, the inner walls of which are corrugated. Under continuous heavy pounding, the opposing angles of these corrugations slowly approximate each other at a predetermined rate, according to the manufacturer. This retards compression of the head and prevents mushrooming. Hammer is made of a non-ferrous copper-base alloy, and reportedly will not spark, chip, or flake. Since no metal is lost, the hammer retains its original balance and weight. Manufacturer states that tests show the new hammer will outlast soft hammers made of rawhide, plastic, or metal.



COMPACT TEST UNIT for on-the-job testing of air-temperature control systems, which can be operated by semi-skilled personnel, has been developed by the Aircraft Division of Barber-Colman Co., Rockford, Ill. The unit checks the whole air-conditioning system, the sensing elements, actuator follow-up rheostats, transmitting rheostats, all resistors in the control box, and the calibration and proper functioning of the micro-positioners and relays.

New Products

Rate Generator

A rate generator made of non-corrosive materials has been added to the line of precision components of Ford Instrument Co. Division of The Sperry Corp.

Designed for 60-cycle, 115-volt operation, the unit delivers 8½ volts at 1,000 rpm, and has a linearity of 0.1% to 1,800 rpm. Zero speed residual (Null) voltage is 100 millivolts, maximum. Weight of the unit is about one pound. The rotor is mounted in stainless steel ball bearings.

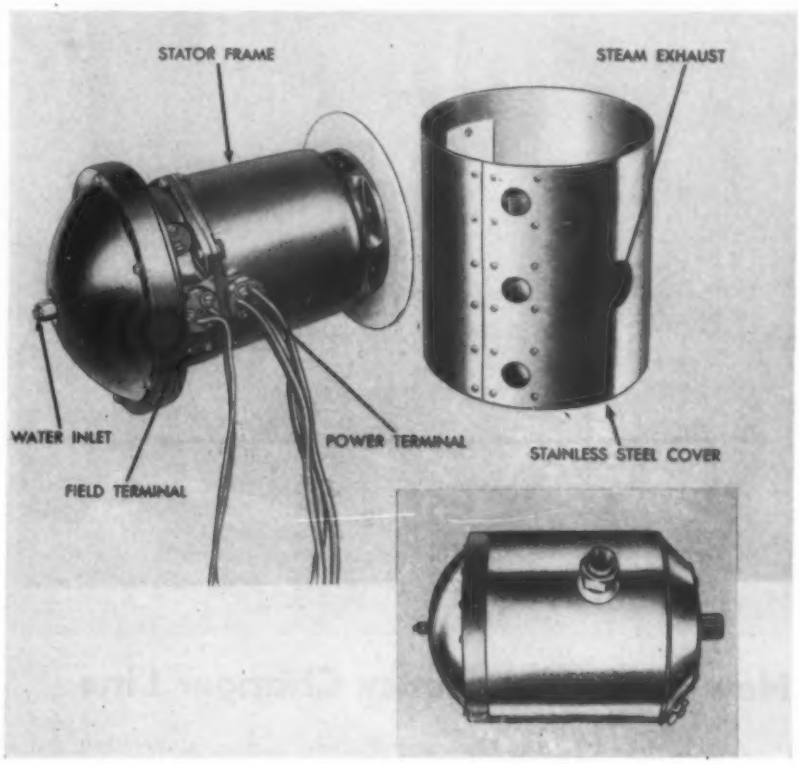
Address: **Ford Instrument Co. Division of The Sperry Corp.,** 31-10 Thomson Ave., Long Island City 1, N. Y.

Instrument Pen

New industrial instrument pen said to eliminate flooding and to reduce paper plugging and choking has been designed by Minneapolis-Honeywell Regulator Co. for use with the company's strip chart electronic instruments.

The new pen has removable tip and a new reservoir construction which keeps ink level below the writing tip. The pen operates with less pressure on the instrument chart, reducing choking caused by paper fiber. The new design fits on standard pen carriages, permitting improved performance for already-installed instruments. Writing tip is made of platinum alloy.

Address: **Minneapolis-Honeywell Regulator Co.,** Brown Instruments Div., Wayne and Windrim Aves., Philadelphia 44, Pa.



Alternator Thermally Isolated

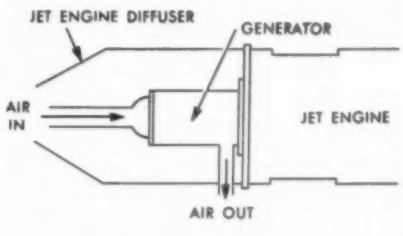
An environment-free alternator cooled by water vaporization has been developed by Jack & Heintz, Inc. The G75 alternator is said to maintain satisfactory cooling while operating in extreme conditions of temperature and altitude.

Ninety-three per cent efficient, the alternator requires 3½ pounds of water an hour at rated load.

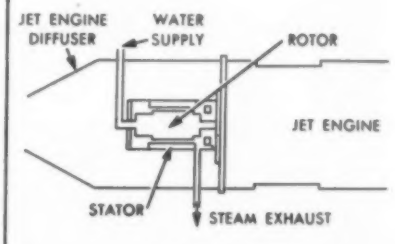
In operation, the coolant from the reservoir is injected into the alternator's hollow shaft under pressure. Centrifugal force propels the water through four ports in spray form and scatters it on the internal surfaces of the machine. As it picks up heat from these surfaces, the water vaporizes to become the coolant. Resultant steam is exhausted through a port. Water inlet flow is regulated automatically by a special valve which is controlled by a temperature-sensing element in the alternator.

The three-phase, 400-cycle, 12,000 rpm unit is rated at 12 KVA but can deliver 16 KVA and maintain satisfactory cooling.

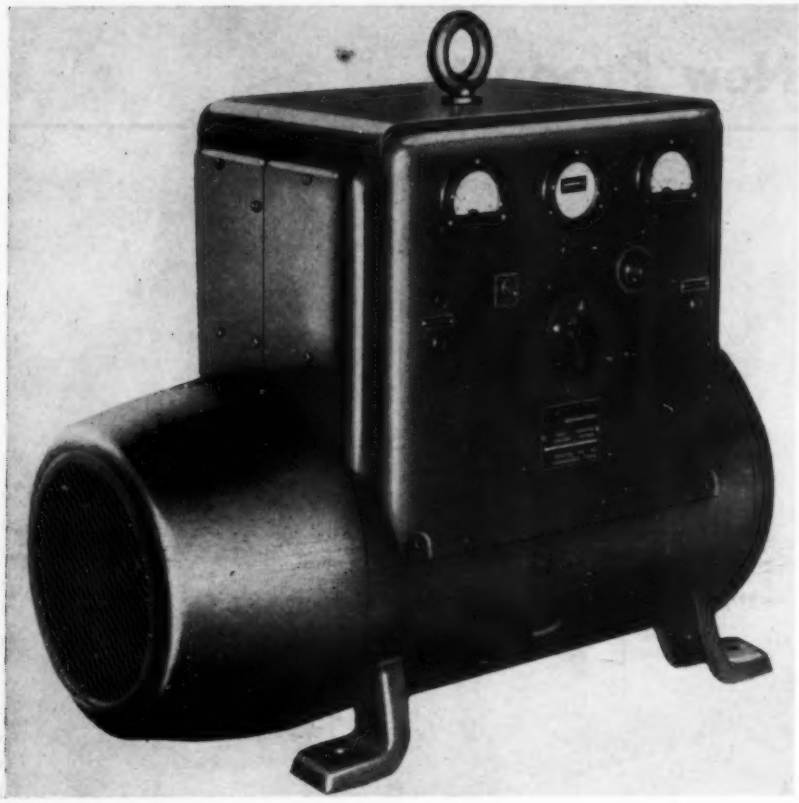
Address: **Jack & Heintz, Inc.,** Cleveland 1, O.



Conventional Alternator



New Type



New Motor Frequency Changer Line

A new line of motor frequency changers in three, five, and ten KW sizes has been announced by The Motor Generator Corp. Aircraft uses include operation of test instruments, functional testing of radio and radar systems, armament, intercom systems, instrumentation, or any test operation where 400-cycle power is required. They are also used for powering control systems of missiles and rockets.

These 60/400 cycle motor generator frequency changers are of the two-bearing (ball bearing) design. The motor rotor, exciter armature, and revolving field are built on a steel shaft that is dynamically balanced to insure against vibration. Monitor top houses all control components.

Output voltage of the units is said to be unaffected by voltage fluctuations in the incoming power supply. Control and protective equipment consists of a full voltage magnetic starter with overload protection in the primary circuit and a magnetic contactor in the secondary circuit.

Address: **Motor Generator Corp.,** Hobart Bros. Affiliate, Dept. RBB, Troy, O.

WORLD'S PREMIER AIRPLANE FABRIC

lighter stronger smoother

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Leading Manufacturers of Fabric and Tapes for the Aircraft industry.

FLIGHTEX FABRIC

Export Representative AVIQUIPO, Inc. 25 Beaver Street, N. Y. Cable: Aviquipo

Self-Sealing Coupling

A coupling being manufactured by the aircraft division of E. B. Wiggins Oil Tool Co. permits fuel to flow from one tank to another with no appreciable drop in pressure.

According to the manufacturer, when two halves of the mated couplings are connected, there is no obstruction to interfere with the flow. The inside diameter is constant throughout the whole length of the coupling. When disconnected, a spring in one of the mating halves causes a flapper valve to drop down at a 90-degree angle. This valve stops the flow from the source.

An application is in conjunction with auxiliary jettisonable fuel tanks, the manufacturer states. When the tank is released, half of the coupling goes with the jettisoned tank. The other half, containing the circular flapper valve, remains attached to the plane. Coupling is made of aluminum alloy. It can be made in any size needed.

Address: **E. B. Wiggins Oil Tool Co.,** 3424 E. Olympic Blvd., Los Angeles, Calif.

Faceshield

"The Halo," a new faceshield, has been developed by the United States Safety Service Co. New feature is an all-green plastic spark protector, which affords wide-angle vision and eliminates glare from overhead lighting. Faceshield has a patented visor lock which locks the visor in the "up" position or in the "working" position, eliminating opportunity for the wearer to adjust the visor so it does not afford full protection. "Halo" is available in three styles of headgear with clear or green visors and a special acid-resistant visor.

Address: **United States Safety Service Co.,** Kansas City, Mo.

Ejector Mechanism

A panel mounting rack, incorporating a mechanism for rapid installation or ejection of control of amplifier panels, has been developed by the Westinghouse Electric Corp. The mechanism is described as greatly reducing the time and effort required to engage the connectors, to hold the panel securely, and to lock it in position. The addition has added eight ounces to the weight of the rack, making a total weight of 1½ pounds.

An operating handle, moving in a horizontal plane, operates a pin which projects through the bottom of the rack. As the handle is moved from an open to a closed position, the pin rises from a recessed position, engages with the panel, and locks it with the connectors. Rotating the handle through an arc of less than 90 degrees toward the open position disconnects panel from rack.

End of the panel opposite the connectors is held securely by two springs, which engage inclined planes on the base of the panel. Adaptation of a panel requires the provision of a hole for pin engagement and two inclined surfaces for spring clip engagement. Mechanism is adaptable to various sizes of racks.

Address: **Westinghouse Corp.,** Aircraft Dept., Lima, O.

Speed Switch

A new aircraft speed switch which operates a double-pole, double-throw relay at a pre-selected frequency without gears or mechanical connection to the engine, is being manufactured by Manning, Maxwell & Moore.

Working with a single tube, the switch, Type 141SJ, uses a Wien bridge type of network to sense frequency. Circuit provides for continuous energizing of the relay above the set point and de-energizing below.

In one application, according to the manufacturer, the frequency signal comes from a standard tachometer generator measuring engine speed. Model illustrated is adjustable from 58 to 62 cps with a differential of 2 cps. Models with other speed settings and differentials are also available.

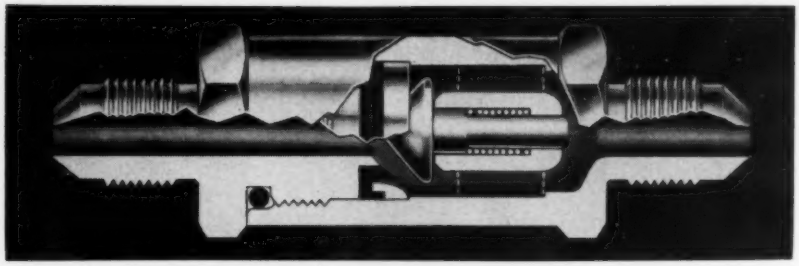
Address: **Manning, Maxwell & Moore,** Stratford, Conn.

Convair Uses Vacuum Pump for Cameras

Lear-Romec camera vacuum pump, Model RG-7730-1, is being supplied to Convair for use on the reconnaissance bomber RB-36. Electric-driven, the pump maintains required oil pressure differential for camera operation. The manufacturer states that oil-less operation of two sliding blades in rotor slots assures free movement at sub-zero temperature. The pump starts cold with no sticking or jamming at—65° F.

Described as being of the rotary-vane type, the pump has a limacon bore in a cast-iron body. Blades are of Graphitar (carbon-graphite). The device's sealed ball bearings contain low-temperature aircraft lubricating grease, specification No. AN-G-25. Motor is 400 cycle, 200 volts, three phase.

Address: **Lear, Inc.,** Romec Div., Elyria, O.

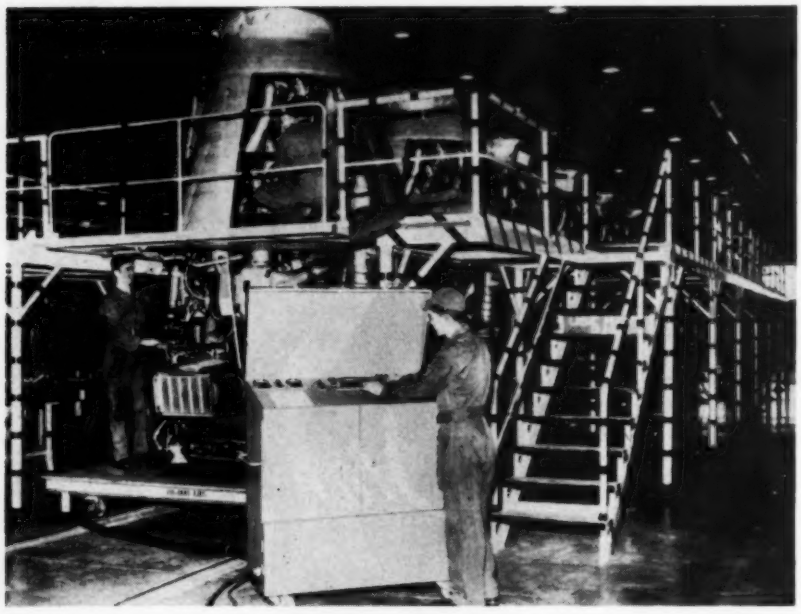


Air Check Valve Leakproof to 4,500 psi

Available from The Cornelius Co. is an air check valve, designed for aircraft pneumatic service, which submersion tests show will not leak at any pressure up to 4,500 psi. Valve's streamlined poppet and straight-through flow of air provide high flow capacity with minimum pressure drop, according to the manufacturer.

The rubber seat is positively positioned and retained to prevent washout during high, surge-flow conditions. The rubber seat compound is described as impervious to oils which are used for lubricating compressors in pneumatic systems. Because of the large seating area, the valve performance is not affected by foreign particles or ice formation on the seat. Valve is available in aluminum or stainless steel.

Address: **The Cornelius Co.**, P. O. Box 905, Minneapolis, Minn.



Aircraft Tester for Reversible Props

An aircraft tester is being produced by Bogue Electric Mfg. Co. for testing reversible propeller circuits during preflight checks. The Bogue Nacelle Tester, a portable instrument mounted on rollers, is reported smaller than a small piano. By means of rapid-disconnect plugs, the tester is connected to the electrical circuits leading into aircraft nacelles. It can automatically check each of 200 electrical circuits within the plane in less than 10 seconds.

A motor-generator set within the tester provides power for operating actuators and servos in the nacelle, including carburetor controls, super-charger controls, magneto controls, and air-passage flaps, in addition to correction-of-limit switches. The tester, which also automatically checks for correct operation of flap-actuated selsyn transmitters, was designed primarily for use in factory production of power nacelles and for use at nacelle rebuilding lines.

Address: **Bogue Electric Mfg. Co.**, 52 Iowa Ave., Paterson 3, N. J.

Technical Literature

SHEET-METAL PRODUCTION: "Craftsmen in Sheet Metal Production," a 20-page booklet available from Lyon Metal Products, Inc., Aurora, Ill., describes and illustrates facilities, management, and finances available through the company at Aurora and York, Pa., for special sheet-metal production. Booklet also contains a complete list of all the Lyon equipment and machinery, including toolrooms, at both plants.

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PALLETS: Recently released by National Pallet Corp., Oliver Bldg., Pittsburgh, Pa., is a 16-page booklet covering use and application of hardwood pallets. Job-engineered and standard pallets are illustrated with suggested uses, load limits, and other data.

SPRINGS: A multicolored, 20-page brochure, "Sandsteel Springs for Dual Power" is being circulated by Sandsteel Spring Div. of Sandvik Steel, Inc., 145 Hudson St., New York 13, N. Y. Charts in the brochure explain the different performances of various qualities of springs: spiral, flat reverse tempered, and crosscurved. The number of turns back from solid of a crosscurved spring is compared with the number required with a spiral quality spring, and it is indicated how a longer, thinner spring can be used when the crosscurved quality is employed. The increased number of turns and the drop in torque at full wind of the crosscurved spring, as compared with an ordinary spring, are chartered in another illustration.

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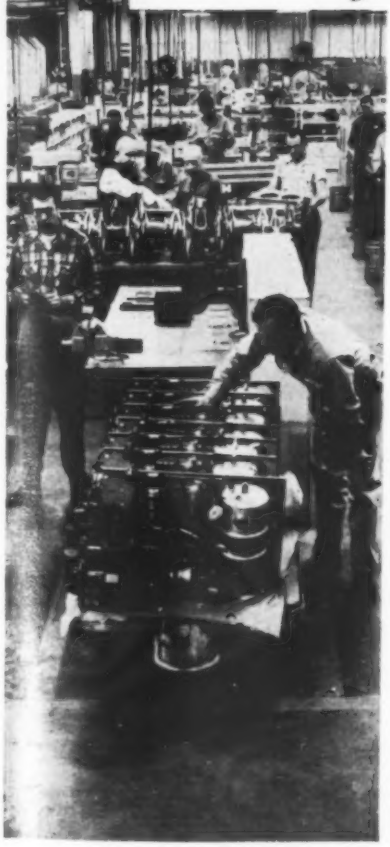
TOOL POST TURRETS: Royal Products, 80 Union St., Mineola, N. Y., is circulating a technical data bulletin on the company's new line of tool post turrets. These tools, according to the booklet, provide 12-position indexing and offer flexibility from one job to another. Simplified charts in the bulletin permit easier size-checking and ordering, according to Royal Products.

TEMCO means

Aircraft Production



From a small stream to a steady flow, TEMCO has stepped up its diversified *aircraft production* to record heights.

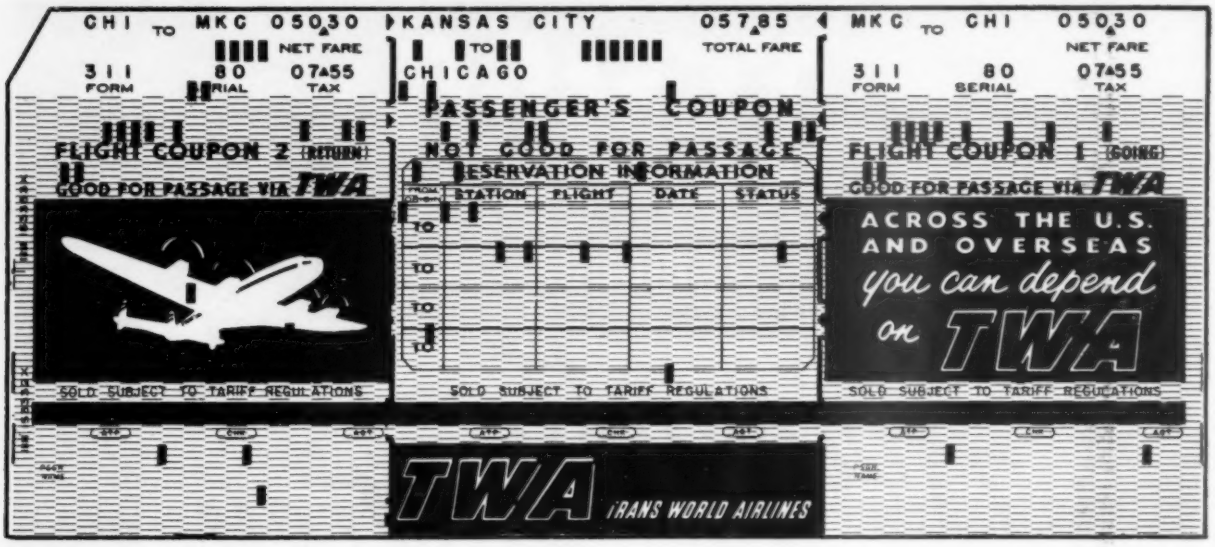
In its six-year history, TEMCO has shown its ability to handle any problem in aircraft production. In one of the country's most modern and best equipped aircraft facilities, TEMCO has produced a light plane (the SWIFT), its own military trainer (the YT-35 BUCKAROO for the Air Force), and a large volume of overhaul work climaxed by the amazing production output of twenty-five C-54's per month for the Berlin Airlift. Now TEMCO is in full swing on contracts for major assemblies of the BOEING B-47, the DOUGLAS A2D, the LOCKHEED P2V and the MARTIN P5M.

With the major portion of U. S. Air Force C-54 overhaul activities recently transferred to its new facility at Majors Field, Greenville, Texas, TEMCO is tooling up for even bigger production projects.

TEMCO

Texas Engineering and Manufacturing Co., Inc.

DALLAS, TEXAS



New IBM Cards Speed TWA Ticket Sales

Use of pre-printed tickets saves up to 50% of "counter" time for passengers, simplifies accounting.

SUBSTANTIAL savings in time for the passenger and a simplified method of keeping records of revenues and tickets have resulted from TWA's use of an International Business Machines card as a passenger ticket.

After several months of tests, TWA placed the ticket in use at all major U. S. stations for regular fares to selected on-line destinations. It will also be used exclusively for transcontinental Skycoach flights, and may later be extended to all domestic trips.

Plodinec

The pre-printed tickets show "from" and "to" points, fare, tax, and total amount of sales, as well as data on one-way or round-trip, ticket number control, and ticket form. The agent simply selects the proper ticket form, writes in the passenger's name and flight number, and checks the type of sale—travel plan, check, or cash.

Booked with the ticket form is an auditor's coupon showing identical information and providing data for sales reports and other statistics. The ticket idea was conceived by TWA's controller's department, under Matthew J. Plodinec.

First step in the procedure is preparation of a master card for each ticket form, with all necessary data on station from, station to, etc., punched into each card. When the revenue department receives an agent's order for tickets, a pre-punched deck of serial numbering cards is placed with the respective master card for the ticket form and station from and to. Cards are then forwarded to the machine accounting department, where serial numbers are reproduced into the IBM card tickets.

Simultaneously, ticket data for each different ticket form are punched from the master card into the tickets. These tickets are then interpreted across the top and the same information is reproduced, punched and interpreted for the auditor's coupon card. Each ticket is sorted behind its respective auditor's card and then bound together.

After the ticket is given to the passenger, the auditor's coupon is placed aside until the end of the day when the agent makes an adding machine tape of all coupons. Tapes and cards are then forwarded to the revenue accounting office.

This office places the cards in the accounting machine and prepares a detailed list of the agent's sales, total of which is balanced against his adding machine tape, thus providing a complete audit. After reproducing a duplicate card for round-trip tickets, the auditor's cards and duplicates are filed by location in the unearned revenue file.

When a passenger boards a plane, the flight portion of the IBM ticket is collected and forwarded to revenue accounting. Flight number, date of flight, and other data are reproduced into a new card.

The reproduced cards are matched by a collator with the cards in the unearned revenue file, and the matched unearned revenue cards are withdrawn automatically. Thus, cards remaining in the file represent tickets sold for which revenue is not yet earned. Matched cards are available for revenue distribution and statistics.

Advantages claimed for the new IBM card ticket plan are:

- **Speeds issuance of tickets** to passengers and insures accurate rate and tax charges.
- **Maintenance of the tickets** at all offices for on-line flights is practical because all re-orders for tickets are filled at the home office from blank stock. This eliminates necessity for large inventories of pre-printed stock at each office.
- **Auditor's coupon replaces** detailed agent's cash report with a simple adding machine tape listing of tickets sold, and mechanizes the audit of sales' reports.
- **Auditor's coupon eliminates** manual punching of all ticket sales and insures an accurate unearned revenue file. Periodically this file is used to gauge unearned revenue.
- **The collected pre-punched flight coupon** affords a means of creating accurate revenue cards to select earned revenue cards. These selected cards are used for revenue distribution and statistical reports, without the need for further key punching and verifying.

People

ADMINISTRATION

Gregorio Obregon Pochet has been elected to succeed **Jorge Restropo Hoyos** who retired as president of Avianca, Colombian National Airline.

Sam B. Redmond has been named to the post of secretary for Continental Air Lines. He was formerly director of research and planning. Newly appointed assistant secretaries of the airline are **Dorothy M. Peri** and **George J. M. Kelly.**

Wayne O. Richardson and **Will G. Ostrum** have been promoted by Pioneer Air Lines to the posts of assistant treasurer and assistant secretary, respectively. Richardson was formerly chief accountant for Pioneer while Ostrum was office manager.

Avery

Walter L. Avery, formerly (1936-45) supt. of passenger service with Eastern Air lines, has returned to the company after an extended leave of absence and has been named personnel requirements manager, reporting directly to controller **Willard Blackwood.**

W. G. Shornick, TWA senior administrative assistant, has been named acting budget manager replacing **Jack Baird,** resigned. Baird, a six year TWA'er, has joined Western Auto in Kansas City . . . **Jack Clifford** is now TWA's Atlantic regional director of industrial relations replacing **Russ Marshall,** resigned. **Howard Frost** succeeded Clifford as regional supervisor of industrial relations.

Scandinavian Airlines System recently made five personnel changes as follows: **John Larsson,** former management assistant, appointed regional sales manager-Germany; **Bernt Grondahl,** executive assistant to the president, assumed the management assistant post; **Eric Carleson,** former district manager-Brazil, appointed assistant to the management; **Richard Ostensen,** named acting regional manager-Brazil; and **V. Lauritsen** appointed superintendent-stations division succeeding **A. Weimer,** resigned.

American Airlines has created six new posts of supervisor-mail traffic and named the following to devote full-time to the development of mail traffic: **Earl Shackelford,** Los Angeles; **Everett Lewis,** New York; **W. C. Delk,** Washington; **William Workman,** Boston; **Eric Tilton,** Chicago; **C. E. Winter,** Detroit.

TRAFFIC & SALES

John Woodruff is now manager-agency sales for the Haley Corporation Travel Service, having resigned from Colonial Airlines as general sales manager.

Don Dearing, assistant to Braniff Airways' general sales manager, has assumed his new duties as traffic coordinator.

EXECUTIVES OF FOUR of the nation's airlines get together to wish each other success in current merger plans. Left to right, J. W. Miller, president and general manager of Mid-Continent; James Carmichael, president of Capital; Croil Hunter, president of Northwest; Thomas F. Ryan, chairman of the board of Mid-Continent; Thomas E. Braniff, president and chairman of the board of Braniff Airways.

Robert H. Price has been appointed by British Overseas Airways Corp. as New York City cargo sales representative.

Robert Hatch is now Braniff Airways' senior sales agent in the Panama Canal Zone with headquarters at Colon.

Jan Ruyter has joined the New York sales department of Sabena Belgian Airlines.

Al Rhett has been promoted by Delta Air Lines to the position of assistant system reservations manager from eastern divisional supervisor.

OPERATIONS-MAINTENANCE

Wayland Shook, TWA flight radio operator, has been elected president of the Air Carrier Communication Operators Association. Shook is the first president of ACCOA, an affiliate of the Air Line Pilots Association.

Five new appointments in Northwest Airlines' operations and maintenance divisions find **J. A. Butcher,** formerly supt. of aircraft engineering, named manager-aircraft engineering; **C. G. M. Magnuson** named supt. of overhaul; **Hjalmer B. Rosdahl** became manager-inspection division succeeding **D. B. Benham,** resigned; while **L. E. Koerner,** a 24 year NWA veteran, became manager-maintenance division, operations department, succeeding **E. B. Curry** who also resigned; and **J. A. Zechiel** was named assistant manager of maintenance.

John E. Crook has been transferred by Pan American World Airways as station manager from Goose Bay to Dusseldorf, Germany. Crook was replaced at Goose Bay by **William G. Mangham,** formerly PAA senior operations agent at Calcutta.

Blossey

Herbert F. Blossey, assistant station manager for United Air Lines at Cleveland since 1945, has been appointed station ground service manager for the company at Detroit.

D. P. Thurber is now chief pilot for the international division of Philippine Air Lines.

Finis D. Hall, relief agent for Pioneer Air Lines, has been appointed the company's manager at Plainview, Texas.

A series of personnel changes at six of Trans World Airlines' domestic stations finds **Thomas W. Parks** as ass't station manager at Wichita, replacing **O. E. Wilson** transferred to St. Louis in the same capacity; **K. W. Hart,** formerly station manager at Marion, Ohio, transferred to Terre Haute and was replaced by **W. H. Meinzer;** and **I. R. Swartley, Jr.,** has become ass't station manager at Philadelphia succeeding **Paul V. Detweiler** who was recently named station manager at Binghamton, N. Y.

Frank W. Toyne has become ass't regional supt.-maintenance for Trans World Airlines at Chicago. He replaces **Jake Fisher** who has returned to line flying as a flight engineer.

Pat Larsen has been named chief stewardess for Frontier Airlines.

Airline Commentary

By Eric Bramley

WE FLEW New York-Bermuda recently on one of the DC-6B's that Pan American World Airways will use for trans-Atlantic tourist service come May 1. This airplane, we predict, is going to attract a lot of new business, and it's also going to take passengers away from regular-fare services.

PAA's DC-6B has 85 Aerotherm seats in it. They're darned comfortable reclining seats and there's sufficient leg room. You're not going to mind a bit sleeping in one for a night (you'll also be saving a couple of hundred bucks). One slight drawback is a narrower aisle than you'll find on some airplanes, but you're not supposed to spend all your time walking around anyway. Yessir, it's a real fine airplane.

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Memo to American Airlines: You have a stewardess by the name of Gay Hancock. Don't lose her. She's a great asset to the company.

On a New York-Washington Convair, Miss Hancock came down the aisle and went through the usual procedure of writing down everyone's name and destination. From that time forward, she called everyone by name. As you know, this is one of the better ways to flatter a person. And seldom have we heard as much favorable comment by passengers about a stewardess as we did about Miss Hancock.

We asked Miss Hancock for her name, warning her that we'd be lucky to remember it long enough to write about her. We also asked her if she ever worked on DC-6's (yes, she did) and if she could remember all the names on this larger equipment (yes, she could). It's a remarkable gift. We were impressed, as witness the fact that we did remember her name.

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On the wall in the New York office of **C. W. Jacob,** vice president of American Airlines, hangs a framed document which is interesting and historical. It's a handwritten statement of the assets and liabilities of The Bee Line, Inc., the first predecessor company of AA.

The Bee Line, Inc., was incorporated March 16, 1923, and its name was changed to Colonial Air Lines, Inc., on May 7, 1924. On June 30, 1923, Loyd L. Anderson, treasurer of The Bee Line, took pen in hand and jotted on a piece of paper the liabilities and assets, as follows:

	Liabilities
Capital stock	$50,000.00
Earnings to date	317.02
	$50,317.02
	Assets
Treasury stock	$43,875.00
Fokker Express byplane	4,000.00
Gasoline	134.96
Hangar supplies	44.25
Oil	16.02
Operating expenses	214.74
Repairs	914.07
Salaries and wages	990.28
Supplies	1.97
Transportation	32.76
Licenses	16.07
Cash on hand	76.90
	$50,317.02

Also framed is canceled check No. 1, in the amount of $4,000, payable to **Harris Whittemore, Jr.,** president of the company. It covered purchase of the Fokker "byplane" (this is the way it was spelled in the financial statement).

Look at American's liabilities and assets today. You'd get writer's cramp if you followed Mr. Anderson's practice and tried to pen them in longhand.

1951 AIRLINE SALARIES

Following are 1951 airline salaries as reported to CAB:

Local Service Carriers

Mid-West Airlines

F. L. Hovde, pres., no salary, $25 bonus and indirect compensation; **Grove Webster,** v. p. and gen. mgr., $541.66 salary; **F. C. Anderson,** asst. gen. mgr., $9,150 salary (up $750); **R. B. Stewart,** secy.-treas., no salary, $150 bonus and indir.

Southwest Airways

Leland Hayward, chairman of board, no salary; **J. H. Connelly,** $15,000 salary (up $4,666.66); **T. R. Mitchell,** v. p. $12,000 salary (up $666.66); **A. W. Johnson,** treas. and dir., $11,400 salary (up $1,000); **Walter Roche,** secy. and dir., no salary; **C. H. Sullavan,** asst. secy. and counsel, $2,800 salary (down $5,600); **Floyd L. Hendrickson,** asst. secy. and dir., no salary; **Harry White,** v. p. and dir., $8,400 salary (up $4,712.53).

Sales Promotion

TWA is distributing to reservations offices of all other airlines a plastic, laminated line-finder for use by counter sales agents in reading across the lines of individual timetables or Official Airline Guides. Idea for the line-finder (which has TWA's name in a prominent place) "came to us after watching countless hundreds of sales agents using reservations cards or pieces of paper for this task," says R. O. Bruemmer, TWA's interline manager.

TWA's St. Louis office (J. C. Stewart, district sales manager) gets credit for preparation of an amusing booklet being distributed to the company's agency and interline friends. It consists of pictures of babies in various poses and with funny facial expressions, each with a caption appropriate to the airline business.

Lockheed Aircraft Corp., as part of its cooperative advertising program, has published an entertaining 26-page booklet, *Fun While Flying,* which it is placing in seat pockets of Constellations operating on several airlines. It's full of games, quizzes, and puzzles, and Lockheed says it will furnish passengers with more than "500 miles of entertainment."

United Air Lines has worked out a special timetable showing its services in connection with those of Southwest Airways (UAL and the local service line exchange lots of business). UAL stood the expense of distributing the timetable coast-to-coast.

Civil Aeronautics Board

Annual CAB Report Stresses Mail Pay

Emphasizes that only 10% of domestic carriers' revenue came from subsidies during 1951.

Final mail rates established during 1951 by the Civil Aeronautics Board will result in savings of $22.5 million to the U. S. Government, according to CAB's annual report to Congress for fiscal year 1951. And the total will be substantially higher when final rate cases for the early months of 1952 are included.

In 1951, airlines placed on final rates refunded $11,082,000 in mail payments. 1952 rates of those carriers will be $11,407,000 less than if previous rates were continued in effect.

Main Emphasis

The report emphasized also CAB's drive for economic mergers, reduced coach passenger fares, greater safety and additional legislation. But it was mainly reflective of the sustained drive in the mail rate field under which CAB hopes to have all domestic carriers on final rates by June 30, 1952.

Exceptions will be five local service carriers, involved chiefly in re-equipment programs, which will be on final rates by December 31. Similarly, CAB said, all international carriers will be on final rates by the December 31 date.

Also, the Board promised Congress that an administrative separation of international subsidy and mail pay would be forthcoming by July 1, 1952. Domestically, the separation was made last fall.

Indicating that 1951 saw a reversal of the upward trend in airline dependence on Federal mail pay support, CAB told Congress that mail revenues constituted only 10% of all airline revenue for domestic carriers last year as compared to 12% in 1950. For international lines, mail pay was 20% of all revenue as compared with 22% in 1950.

On the merger and route structure realignment questions, CAB said that a national route structure is desired which will produce maximum service at lowest cost "with well-integrated air carrier systems." These can be achieved through:

- **awarding of new routes** where economically justified;
- **mergers** and interchanges;
- **elimination** of duplication over weak segments;
- **route extensions** through transfer to route segments;
- **extension of service** to maximum number of communities which can support such services.

Board also noted that the over-all passenger fare per mile for domestic trunk lines in 1951 dropped from 5.6c to 5.5c and for international lines from 7.43c to 7.18c. On additional legislation, many pending requests were renewed and some new ones added. These include requests for statutory power to:

- **require separation** of subsidy from service elements in air mail payments.
- **authorize imposition** by the Board of civil penalties in economic cases.
- **broaden the Act** to cover unfair methods of competitions and practices of ticket agents.

WCA Gets Local Route Extension

West Coast Airlines has been authorized to continue local service operations over a modified route through September 30, 1954. Carrier's new certificate, designed for more efficient operations, is minus a Seattle-Bellingham segment and various other Washington and Oregon cities.

In granting the extension, CAB ruled against suspending trunk-line services of United Air Lines at four points in the area served by West Coast, namely Salem, Bellingham, Bend and Klamath Falls. Board's authority to compel such suspension is now in the courts as a result of actions brought in other cases by United and Western Air Lines. But in the West Coast case, CAB said the public interest does not require suspension by United.

West Coast's original certificate expired November 22, 1949, but operations have continued pending disposition of its renewal application. During the pendency of the application, the line tried unsuccessfully to merge with Southwest Airways. Since then, it has entered a deal to buy up the outstanding stock of Empire Air Lines and the case is now pending before CAB.

The reissued certificate becomes effective May 12, 1952, to afford an opportunity for WCA to cease operations at cities dropped from its routes.

Urges Route Renewals

Temporary renewal of trans-Atlantic certificates of Pan American and TWA which expire July 4, 1952, plus permanent renewal of TWA's New York-Paris route have been urged by counsel for CAB's air operations bureau, Ronald H. Cohen. In a brief to the Board, Cohen said a three year renewal at this time would be in the public interest except for operations east of India which he said should be extended only for one year and the New York-Paris route of TWA which should be made permanent.

Decisions

- **Lake Central Airlines** turned down on request for bill of particulars and for the withholding from public disclosure of specific charges against the company and its management made by CAB.
- **Chicago and Southern Air Lines'** application for transfer of Greenwood, Mississippi, to Southern Airways routes consolidated with Southern Certificate Renewal Case.
- **Civil Aeronautics Administrator's** exceptions to examiner's report in C-46 Investigation ordered physically stricken from the record because material is not in accord with Board's procedural regulations.
- **Pan American World Airways** denied continued exemption authority to serve St. Lucia, B.W.I., as an intermediate between Fort de France, Martinique, and Port of Spain, Trinidad.

CAB CALENDAR

April 7—Hearing in All American Airways Certificate Renewal Case. Washington. (Docket 5053 et al.)

April 7—Hearing in Island Air Ferries Certificate Renewal Case. Washington. (Docket 5083).

April 15—Hearing in New England-Southern States Merger Case. Washington. (Docket 5124).

April 15—Hearing in North Atlantic Tourist Commissions Case. Washington. (Docket 5422).

New Services

Capital Airlines on May 1 will start daily non-stop New York-Birmingham service. Flight will originate in Birmingham, proceed to New York, back to Birmingham, and continue non-stop to New Orleans. On same date, company will also inaugurate new daily DC-4 service from Birmingham to New York via Chattanooga, Knoxville and Charleston, W. Va.

Eastern Air Lines has added two non-stop New York-Miami Super Constellation flights and four Detroit-Cleveland-Miami trips with the same type of equipment. Also added is a Boston-St. Louis trip with Martin 4-0-4's.

United Air Lines has inaugurated an all-daylight service from Washington to Seattle-Tacoma via Denver and Salt Lake City.

British Overseas Airways Corp. will start Atlantic tourist service May 3 with two weekly round-trips, increasing to three May 13, and adding a fourth, fifth and sixth on June 7, 10 and 13. Constellations will be used. Company has replaced Connie with Stratocruisers on New York-Bermuda. Three weekly flights leave New York on Fridays, Saturdays and Sundays,

Pan American World Airways will inaugurate once-weekly Stratocruiser service between New Zealand and U. S. via Fiji Islands and Hawaii on April 2, replacing DC-4's. PAA has increased all-cargo flights between Seattle and Fairbanks, Alaska, from three to five round-trips weekly.

SUMMARY OF U. S. LOCAL SERVICE AIRLINE TRAFFIC FOR DECEMBER 1951

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	MAIL TON MILES	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
				%									
All American	12,873	1,979,000	5,231,000	37.84	6,628	10,705	. . .	210,906	597,873	35.28	249,114	287,846	78.77
Bonanza	2,198	576,000	1,510,000	38.15	583	379	1,057	53,550	#	30.58	75,154	78,616	93.30
Central	3,575	528,000	2,948,000	17.91	2,265	918	2,023	50,499	299,565	16.86	124,819	122,523	97.99
Empire	3,409	760,000	2,174,000	34.96	3,644	1,333	. . .	76,968	236,590	32.53	103,518	105,834	94.20
Frontier	8,716	2,286,000	8,046,000	28.41	12,713	7,158	25,227	274,753	642,009	42.80	383,424	394,618	96.93
Lake Cent.	1,887	453,000	1,822,000	24.86	1,673	4,014	. . .	53,398	213,097	25.06	88,976	110,112	71.75
MCA*	3,188	699,000	1,741,000	40.15	1,827	3,001	2,431	73,894	191,990	38.49	79,996	83,948	93.03
Mid-West	161	29,000	222,000	12.93	758	. . .	. . .	3,127	24,365	12.83	55,378	76,322	72.56
Ozark	4,571	792,000	4,288,000	18.47	2,972	4,317	. . .	81,373	433,576	18.77	204,180	232,956	85.52
Piedmont	15,197	3,866,000	7,689,000	50.28	6,960	5,749	12,480	394,458	878,849	44.88	366,187	374,668	95.24
Pioneer	13,202	3,482,000	8,222,000	42.35	12,138	4,113	13,457	379,447	822,146	46.15	342,557	342,292	98.85
Robinson	7,631	1,280,000	2,736,000	46.78	2,793	4,501	2,492	128,219	292,181	43.88	130,691	135,758	86.22
Southern	8,668	1,610,000	5,724,000	28.13	9,152	8,136	. . .	171,219	517,038	33.12	272,555	278,876	97.70
Southwest	8,808	1,776,000	4,074,000	43.59	8,556	3,575	5,861	196,167	465,602	42.13	194,001	203,984	89.09
Trans-Texas	6,626	1,508,000	5,320,000	28.35	5,923	2,959	5,461	165,728	527,557	31.41	251,218	255,316	96.95
West Coast	5,413	834,000	2,384,000	34.98	966	724	1,631	81,572	211,566	38.56	115,884	122,202	90.25
Wiggins	190	18,000	123,000	14.63	92	76	. . .	1,778	13,125	13.55	31,528	46,420	66.29
Wis. Cent.	6,440	1,013,000	3,035,000	33.38	6,747	7,872	. . .	110,180	355,807	30.97	144,503	170,562	84.72
TOTALS	112,753	23,489,000	67,289,000	34.91	86,390	69,530	72,120	2,507,236	6,722,936	36.50	3,213,683	3,422,853	90.96
						Helicopter Mail Service							
HAS	. . .	. . . .	. . . .	. . .	2,363	. . .	. . .	2,363	4,981	47.44	26,515	30,518	86.88
Los Angeles	. . .	. . . .	. . . .	. . .	3,982	. . .	. . .	3,982	7,751	51.37	20,450	21,259	96.19

Not available.
* Figures cover local service segment (route 106) awarded MCA by CAB in the Fares Air Lines Investigation Case.
NOTE: Figures include both scheduled and non-scheduled operations.

SUMMARY OF U. S. LOCAL SERVICE AIRLINE TRAFFIC FOR CALENDAR 1951

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	MAIL TON MILES	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
				%									
All American	213,896	30,689,000	69,853,000	43.93	60,157	148,872	. . . .	3,210,906	7,983,180	40.22	3,326,325	3,411,958	93.98
Bonanza	30,216	7,716,000	18,866,000	40.90	6,483	3,066	16,033	734,316	2,040,756	35.98	928,371	933,475	97.61
Central	35,303	5,263,000	28,565,000	18.42	22,291	5,994	10,928	543,480	3,163,325	17.18	1,462,731	1,433,555	97.75
Empire	44,658	9,463,000	26,824,000	35.28	25,559	18,511	. . . .	926,836	2,831,612	32.73	1,277,445	1,251,813	98.44
Frontier	104,792	28,015,000	92,014,000	30.45	127,808	76,990	303,611	3,321,453	8,259,615	40.21	4,550,432	4,581,076	98.32
Lake Cent.	31,564	6,176,000	25,321,000	24.39	15,276	85,925	315	668,315	2,816,317	23.73	1,240,663	1,257,120	91.71
MCA*	42,058	8,710,000	20,179,000	43.16	21,342	43,477	39,097	935,462	2,287,867	40.89	953,278	988,420	95.71
Mid-West	2,693	406,000	3,094,000	13.12	9,501	. . . .	. . . .	42,715	340,286	12.55	773,387	901,582	85.75
Ozark	49,507	8,130,000	42,294,000	19.22	23,814	59,952	. . . .	833,417	4,139,480	20.13	2,055,915	2,293,103	88.51
Piedmont	189,831	44,380,000	88,184,000	50.33	65,808	85,107	126,328	4,521,974	10,075,448	44.88	4,198,103	4,198,974	98.21
Pioneer	164,171	43,891,000	96,914,000	45.29	108,428	43,959	162,239	4,722,037	9,723,809	48.56	4,051,422	3,924,657	99.40
Robinson	103,696	16,276,000	31,890,000	51.04	28,373	61,566	39,082	1,590,989	3,309,563	48.07	1,546,870	1,531,569	93.91
Southern	96,818	17,439,000	63,497,000	27.46	86,011	79,359	. . . .	1,831,966	5,736,251	31.94	3,026,198	3,081,942	97.55
Southwest	137,821	27,383,000	53,060,000	51.61	62,909	46,480	125,243	2,981,883	6,063,911	49.17	2,526,630	2,488,109	96.53
Trans-Texas	77,799	18,455,000	61,980,000	29.78	50,766	29,482	65,055	1,996,911	6,196,045	32.23	2,948,508	2,924,866	98.52
West Coast	78,876	11,930,000	28,479,000	41.89	10,628	10,577	35,583	1,134,464	2,629,666	43.14	1,372,056	1,364,020	96.39
Wiggins	4,094	382,000	2,071,000	18.45	1,352	1,701	. . . .	37,152	222,635	16.69	529,168	709,195	73.06
Wis. Central	96,302	15,309,000	36,337,000	42.13	60,292	107,408	. . . .	1,610,680	3,748,372	42.97	1,982,862	2,103,616	94.02
TOTALS	1,504,095	300,013,000	789,422,000	38.00	786,798	908,426	923,514	31,644,956	81,568,138	38.79	38,750,364	39,379,050	95.79
						Helicopter Mail Service							
HAS	. . . .	. . . .	. . . .	. . .	24,860	. . . .	. . . .	24,860	64,508	38.54	326,009	346,852	93.99
Los Angeles	. . . .	. . . .	. . . .	. . .	45,764	. . . .	. . . .	45,764	120,329	38.03	293,212	308,602	94.61

* Figures cover local service segment (route 106) awarded MCA by CAB in the Fares Air Lines Investigation Case.
NOTE: Figures include both scheduled and non-scheduled operations.

REMOTELY CONTROLLED flight indicator boards, installed by Aer Lingus at Dublin Airport, as they look to the public.

Aer Lingus Tests Automatic Flight Boards

Remotely controlled indicator signs give arrival and departure times; use bus-type rollers.

REMOTELY controlled flight indicator boards, probably the first of their type to be installed in any airport, have been designed by Aer Lingus and installed in Dublin Airport, Ireland.

In its position as airport operator and airline, Aer Lingus installed the indicator boards (see photos) to provide passengers and other interested parties with up-to-the-minute flight arrival and departure information without assistance from agents.

Using the standard roller mechanism found in Ireland's double-deck bus signs, the Communications Division of Aer Lingus, under the direction of Captain J. C. Kelly-Rogers, assistant general manager-technical, adapted it for remote operation by use of electric motors and reduction gearing. Twelve indicator panels, each consisting of a roller and clock, make up the arrival and departure boards. Each panel is readily replaceable, being connected into the electrical circuit with a simple plug-type connection.

Additive Circuit

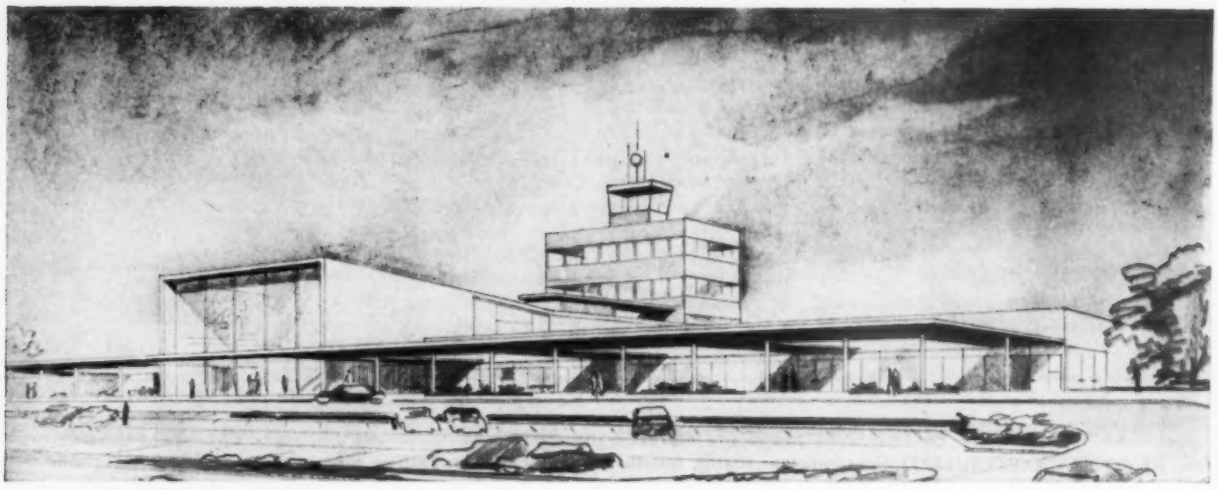
A controller unit, located in view of the indicator boards and operated by one of the agents, controls operation of the rollers and setting of the clocks. The 12 panels are numbered one through 12, and a standard telephone-type dial is used to select the desired panel. The selector circuit is additive: dialing the number six operates panel six, while dialing the number six twice selects panel number 12.

Once the panel is selected, a two-way switch controls movement of the roller to select the particular flight. The blinds are printed alphabetically to simplify locating, and the switch will roll the blind up or down. Another switch operates the clock, adjacent to each roller, to set it to the arrival or departure time of the flight. The clocks can be moved forward or backward at variable speeds.

A further convenience is a built-in loudspeaker in the controller connected with the source of flight information. Once a panel is selected, a red lamp glows alongside the number selected. When selection is completed a "reset" button lights a green light indicating the controller is free to set another panel.

CONTROLLER, located in view of the indicator boards, provides controls for selecting individual panels, setting the clocks, and receiving current flight information.

PHYSICAL LAYOUT of the indicator boards is apparent from rear.



GENERAL MITCHELL FIELD terminal building and tower, modern in architectural concept, feature functional-flow design.

How Milwaukee's New Terminal Will Look

Work to begin in early April on $2 million building with airline offices near apron edge.

PLANS for the sleek new terminal building at General Mitchell Field, Milwaukee, Wis., demonstrate how trim appearance can be combined with the capacity and broad utility demanded by increasing traffic at the nation's high-density airports.

County Pays $1 Million

With total cost of the building estimated at $1,984,000, construction is scheduled to begin early in April. Milwaukee county's share of the cost is estimated at $1,100,000.

The actual building work will follow financial preplanning, preliminary building plans, and advisory service provided by Leigh Fisher & Associates, airport trade analysts. Architectural plans were drawn up by Victor Olgyay, working in conjunction with the Fisher organization.

According to Fisher, the building as planned offers a "substantial departure" from previous terminal buildings in that the airline operational offices and cargo areas are placed underneath the second-level fingers, so that the airlines' entire personnel complement is located close to the apron gate position. The only functions housed in the two buildings which comprise the terminal building proper, the roadside and fieldside buildings, are ticketing, baggage receipt, and claim. All the other airline functions are conducted beneath the concourse on the apron edge.

Hub of the building is located across a bridge, a portion of the second floor which spans the trucking court. At the central hub, the passenger is beyond the point of all off-field vehicular traffic, where he is free to depart or observe aircraft movements without interference from vehicles of any type.

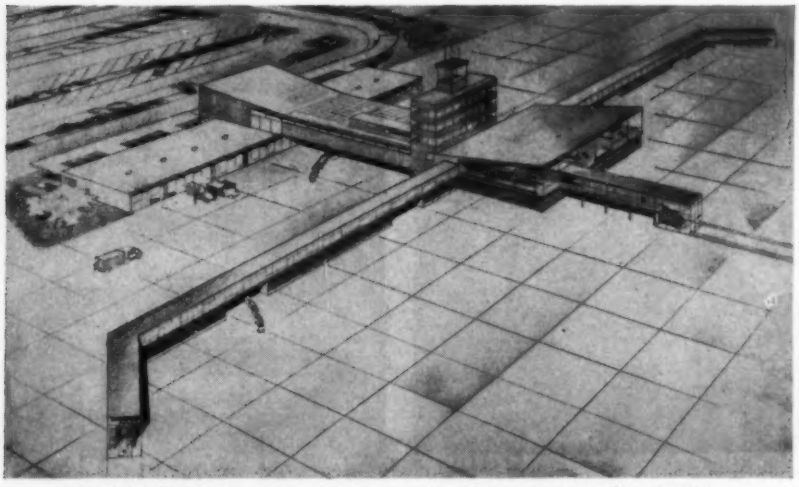
Recognizing the increasing demands of both freight and passenger traffic for more and better facilities, planners established a set of basic criteria for the whole terminal area. Chief among these were provisions for:

Expansion Provisions

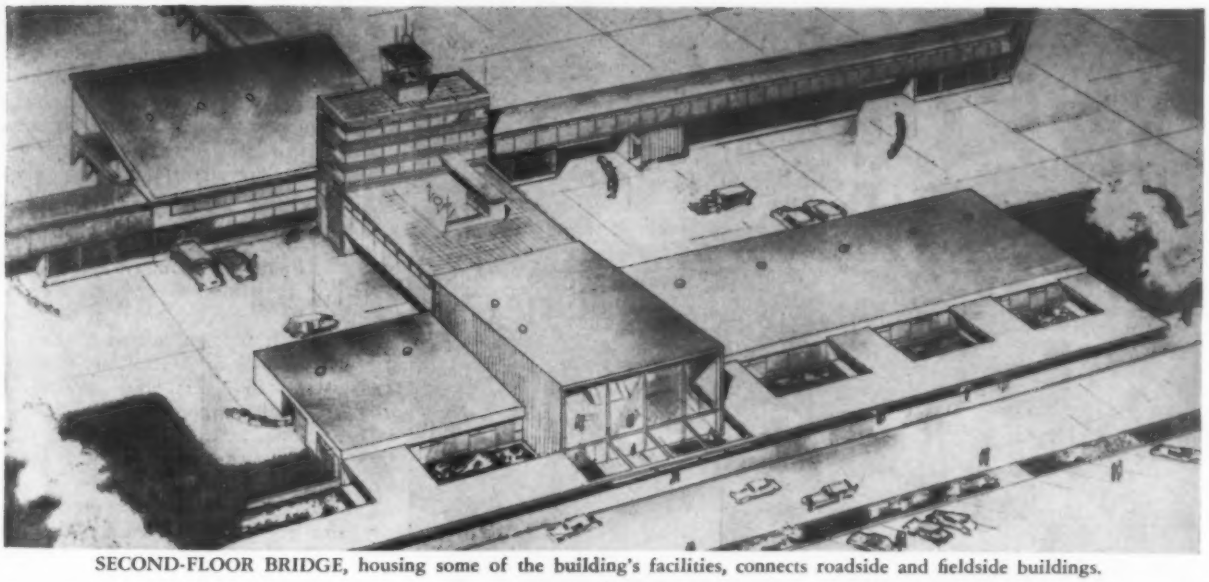
- **Adequate gate positions.** First phase of construction will provide 22 positions; later there will be 35. But provisions have been made for an increase of capacity 100% above that.
- **Expandability.** Parts of the building at which expansion is planned are to be built of three-inch insulated metals which can be removed.
- **Compactness.** Effective use is made of available space by a rough subdivision of the terminal areas into the functions they serve. These include the multifingered passenger concourse, cargo area, auto parking area, and an area for commercial and itinerant use.

Other facts about the building:

- **Structural skeleton,** except that of the tower, will be of lightweight steel pipe columns, with structural beams and steel building panels being used for intermediate floors and the roof decks.
- **Entrances to the ticket concourse,** baggage concourse, postal department, and the public walk outside the building will be protected from the elements by cantilevered, lightweight steel canopies.



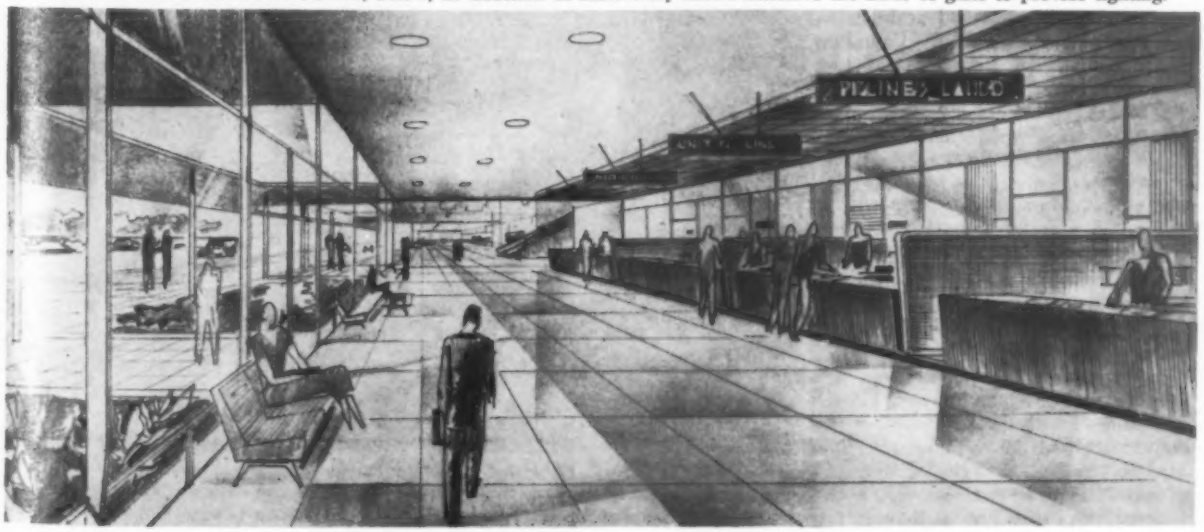
BROAD APRON allows space for expansion of first-phase loading facilities.

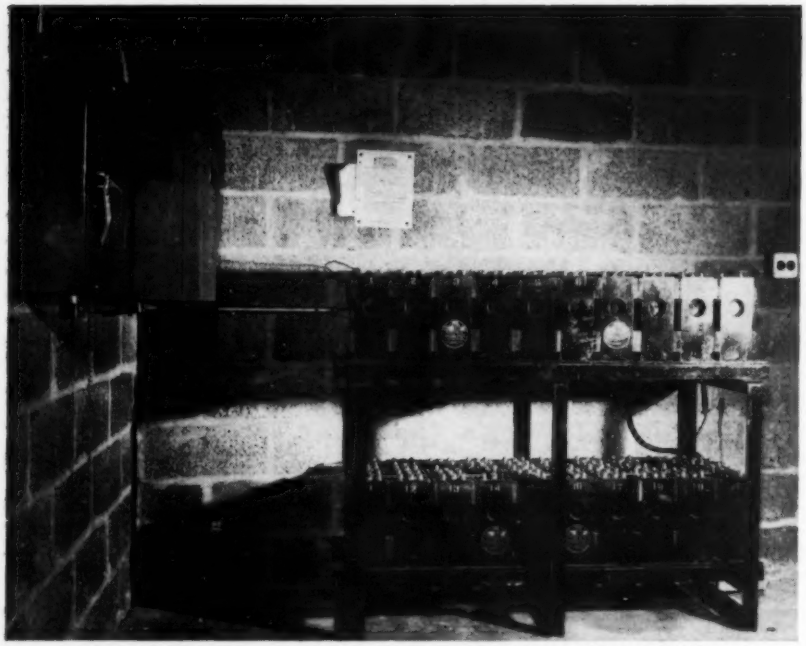


SECOND-FLOOR BRIDGE, housing some of the building's facilities, connects roadside and fieldside buildings.

TERMINAL BUILDING MODEL shows planes spotted at loading positions. Airline offices are under second-level fingers.

VIEW OF AIRLINE CONCOURSE, below, in direction of main entry shows extensive use made of glass to provide lighting.





96-CELL Nicad battery supplies standby power for operations building.

Nickel Cadmium Cells Guard Idlewild

Standby batteries for N.Y. International Airport need little maintenance, water every year or two.

APPLICATION of nickel cadmium batteries for stand-by power in case of electrical failure at airports is marked by installation of these long-life batteries, commonly used in utility, marine, and railroad services, at New York International Airport. Possibility of main power failure at an airport poses a problem affecting such vital facilities as runway lighting, fire-alarm detection, and airport lighting in general.

Alkaline Type

The batteries installed at Idlewild, manufactured by Nickel Cadmium Battery Corp., Easthampton, Mass. are an alkaline type.

Their features:

• **Decreased maintenance** requirements reduce manhours absorbed.

• **Since batteries** do not sulphate, they can be stored for long periods of time.

• **Batteries derive** increased reliability from the fact that they are not affected by overcharging.

The following installations have been made at Idlewild:

• **In the switch house.** This is a Nicad, Type SMC11H, 96-cell, 125-volt installation with a capacity of 50 ampere-hours at the five-hour rate. It is used for tripping and closing operation of switch gear in the 4160-volt system and furnishes switch-house light in case of power failure. This battery is trickle-charged by a copper oxide rectifier that furnishes a normal float charge of 134 volts (1.40 v. per cell).

• **At the operations building.** Here is used a Nicad, Type SMC13H, 96-cell, 125-volt battery which supplies a capacity of 60 ampere-hours at the five-hour rate. It supplies independent power to a remote-control panel that registers visual and audible detection of electrical failures in the airport's four-KV electrical distribution system.

Alarm System

• **Airport fire alarm system.** This is a Type LAL10H, 46-cell unit with a capacity of 50 ampere hours at the five-hour rate. It supplies current to the system in case of an AC failure, relaying any alarm to central-office equipment located in the airport's security garage. This equipment is actually a panel that gives visual and audible alarm to mark tampering with or breakdown of the sprinkler system or fire pumping station. It also registers any alarm from all hangars, the temporary terminal building, the airport's Federal Building, and fuel storage buildings.

Since stand-by power of this type must be thoroughly reliable although given a minimum of maintenance, the characteristics of the Nicad battery in this respect are of interest.

Watering of the batteries is not required more often than once every year to two years, according to reports. They require no specific-gravity records or equalizing charges, though batteries should be kept reasonably clean and dry. They can be maintained in a healthy state of charge when they are floated at from 1.40 to 1.45 v. per cell.

FORTY-SIX CELL nickel cadmium battery installation furnishes reserve power for fire-alarm system in case of a-c current failure. Equipment it would power records fire-alarm signals from alarm boxes.

Congress Cool to Local Service Prototype Bills

Concerned over lack of local-line prototype aircraft, a group representing local service airlines has been conferring with members of the Senate and House Interstate and Foreign Commerce committees and professional staff assistants relative to prospects for action at this session of Congress.

The delegation reported that there does not seem to be much Congressional interest in prototype legislation at this time, but the Senate committee, of which Senator Edwin C. Johnson (D., Colo.) is chairman, may hold hearings next month on the need for a Federal appropriation to spur development of an efficient and economical local service transport.

Representing the local lines were Tom Davis, president of Piedmont Airlines; Robert E. Peach, executive vice president and general manager of Robinson Airlines; and James G. Ray, of the consultant firm of Ray & Ray.

British Approach Aid

The British have developed for small airfields the Ecko Approach Aid, similar to GCA but costing only one-twentieth as much.

Designed by engineers of E. K. Cole, the system works as follows: as an aircraft approaches the field and calls the tower on radio, its bearing is identified on VHF Direction Finder. This bearing is used to pick up the aircraft on a simple radar screen, the beam of which has a 15-mile range.

Lockheed Factory Space Up 60% for Transports

A step-up of transport production at Lockheed Aircraft Corp. is indicated in the announcement of its plans calling for a 60% increase in factory space for such activity.

Three more Super Constellation deliveries to Eastern Air Lines in March raises the total to 14 commercial deliveries of this type. TWA's first Super Constellation is slated for mid-summer delivery.

March deliveries to EAL complete the first phase of the carrier's order, covering the regular piston-engine version of L-1049. Second phase, covering 16 Model 1049C Constellations, powered by Wright Turbo Compound engines, is next, with initial deliveries scheduled for the fall of next year. Final assembly operations have been transferred from Plant B-6 to Plant A-1 to meet increased transport production schedules.

Airports Show Profit

The following figures showing the apparent economic health of a number of airports in the southeastern U. S. were compiled by the Airport Management Consultant Section of CAA's Region 2. This is part of the CAA unit established after the war to serve as fiscal and management consultant to the 800 municipalities, counties, and states operating an equal number of airports declared surplus by the military establishment. It is this same group which is being totally discontinued because of lack of funds.

These statistics are representative of the interest this organization has taken in the efficient management of the airports with which it works in an advisory capacity. A CAA spokesman reports that "southeastern airports in great number are operating in the black." He attributes this to "progressive and alert airport management." These figures cover the last reported fiscal year:

Airport	Revenue	Expenses	Operating Profit
Berry Field, Nashville, Tenn.	$272,306.85	$220,005.34	$ 52,301.51
Municipal Airport, Memphis, Tenn.	220,540.77	119,629.78	100,910.99
McGhee-Tyson Airport, Knoxville, Tenn.	120,000.00	58,000.00	62,000.00
Cochran Field, Macon, Georgia	109,864.56	82,673.74	27,190.82
Municipal Airports, Augusta, Ga.	84,638.15	81,621.38	3,016.77
Columbia Airport, Columbia, S. C.	67,154.01	53,957.55	13,196.46
Travis Field, Savannah, Ga.	46,855.76	46,659.37	196.39
Raleigh-Durham, Raleigh, N. C.	38,676.81	34,409.58	4,267.23
Greensboro-High Point, Greensboro, N. C.	26,489.55	18,671.56	7,817.99
Municipal Airport, Greenwood, Miss.	11,465.12	10,602.49	862.63
Municipal Airport, Valdosta, Ga.	8,573.85	8,550.94	22.91

Other southeastern airports known to be definitely "in the black" but for which no figures have been obtained are those at:

Atlanta, Ga.
Bartow, Fla.
Birmingham, Ala.
Charlotte, N. C.
Clarksdale, Miss.
Daytona Beach, Fla.
Dothan, Ala.
Fayetteville, N. C.
Ft. Lauderdale, Fla.
Gadsden, Ala.
Goldsboro, N. C.
Greenville, S. C.
Jackson, Miss.
Jackson, Tenn.
Lakeland, Fla.
Laurel, Miss.
Meridian, Miss.
Miami, Fla.
Myrtle Beach, S. C.
Sarasota, Fla.
Sebring, Fla.
Tallahassee, Fla.
Tampa, Fla.
Union City, Tenn.
West Palm Beach, Fla.
Yazzo City, Miss.

•

Wichita Protest: **Following a Federal court award of $11,064,515 to the city of Wichita, Kans., as payment for the former Municipal Airport taken over by the Air Force, an appeal has been made by the Federal government protesting the amount of the award which was determined by court-appointed appraisers. Original guarantee made to the city by the AF was about $9,000,000 for the construction of a new airport, of which approximately $4,000,000 has been paid into the court. Date of trial of the Government appeal has been tentatively set for the first week in May, 1952. Meanwhile, work on the new airport is going ahead. April 1 is target date for pouring concrete on the N/S runway.**

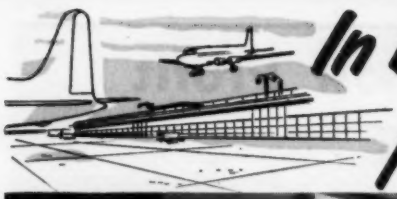
RUNWAYS, TAXIWAYS, OTHER PAVING

• Salt Lake City, Utah, city commission has adopted a resolution calling for construction of a proposed $1,679,550 instrument runway at the city's Municipal Airport, with financial contributions from the CAA and Air National Guard.

• A $150,000 taxiway system at Gary (Ind.) Municipal Airport is being considered for construction this summer.

• Work on paving a runway and a portal taxiway amounting to $489,400 at Tri-State Airport, Huntington, W. Va., has been scheduled.

. . . RICHARD FULLER



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Production Spotlight

FIRST WASP MAJOR built by Ford Motor Company's Aircraft Engine Division in Chicago is run through calibration check by test engineers. The engine already has successfully completed its five-hour test.

Deadly Sparrow Missile Revealed

Rear Adm. J. B. Moss, assistant chief of the Navy's Bureau of Aeronautics, recently revealed the existence of a new air-to-air guided missile, the Sparrow, which is also being developed in a ground-to-air version. The Sparrow, he said, is capable of making direct hits or fatal near-misses on enemy planes at two- to four-mile ranges and is being produced in lots of 20 to 30 at present, although large-scale production is slated to start early in 1953.

In testimony before the Senate Small Business sub-committee, headed by Blair Moody (D., Mich.), the admiral also revealed:

• **Texas Engineering and Manufacturing Co.** will build the new McDonnell F3H Demon under license. This will mark the first time Temco has been called on to build a complete military airplane.

• **The Westinghouse J-40** 7,500-pound-thrust jet engine is one of four Navy "Brickbat" or super-urgency procurement items. Westinghouse has been able to obtain delivery on only 2,000 of the 3,800 tooling items required to build it at Kansas City.

Other recent witnesses before the Moody sub-committee included Assistant AF Secretary Roswell L. Gilpatric, Munitions Board chairman, John D. Small, and Clay P. Bedford, special assistant to the Secretary of Defense.

Gilpatric admitted under questioning that $3.5 billion might be cut from the 1953 USAF budget if equivalent contract authority were granted instead. He also reported the services had "tossed a coin" to determine who would get first priority on machine tool deliveries.

Small indicated, however, the Defense Department will oppose any move to substitute contractual authority for cash because, he said, defense bookkeeping would be complicated and no money would be saved. Moody was unconvinced and said such possibilities will be explored.

Bedford reported Defense Mobilizer Wilson would soon set up a special commission on the machine tool problem to straighten out conflicts in demand and to stimulate tool output.

First Kaiser-Frazer C-119 Completed

First C-119 transport to be built at Kaiser-Frazer Corp.'s Willow Run plant has been completed and is expected to fly soon. Built from parts made by Fairchild at Hagerstown, the K-F Flying Boxcar incorporates Wright R-3350 engines rather than the Pratt & Whitney R-4360's which have been used heretofore. Fairchild is also slated to adopt the Wright engines.

First of the cargo planes to be completely built by K-F will be completed by autumn, about the same time construction of the Chase C-123 is scheduled to begin there. C-119's will "phase-out" later and C-123 production will continue, according to present plans.

Boeing to Design Atomic Airframe

Boeing Airplane Co. joined the small list of firms involved in the design and construction of an atomic-powered bomber when it was awarded a USAF contract for an engineering study of an airframe to go with the atomic engine to be developed by Pratt & Whitney.

The Air Force previously awarded a similar contract to Consolidated Vultee Aircraft Corp. Convair is working with the General Electric Co., which is developing a different type of nuclear engine.

Ryan: Politics Cause of Aircraft Program Delay

T. Claude Ryan, president of Ryan Aeronautical Co., charges that "political considerations" dictated the stretch-out of the aircraft program and the mistakes in programming are endangering the U. S. He is quoted by a San Diego newspaper as saying that the nation's security "is being bungled to a point where it is now dangerous."

Ryan

Ryan places the blame on "top Truman policymakers" who are making "wrong decisions or no decisions at all." He points out that Congress voted the money for a 70-group Air Force before Korea but that "under Administration instructions the money was impounded and the President usurped power to which he had no right.

"If the Air Force had been given the planes it required to strengthen its position in Korea, the country would not now have to bow to the Russians, swallow a lot of soft soap and excuses and minimize the gravity of the situation in Korea," he said.

'Copter Tests Ordered

USAF has ordered service-test quantities of the YH-31 helicopter to be used for evacuation, observation and reconnaissance. It is the military version of the Doman LZ-5, which handles six passengers or four litter patients and attendant for short flights.

THE BULLETIN BOARD

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INSTRUMENTS: AN5730-2A (2B) (6A) & AN5730-3 Compasses; AN5735-1 Type A-5 Gyro Direct. Indicators; AN5736-1 Type C-7 Gyro Horiz. Indicators; AN5743-1A Elgin Clocks; AN5860-2 Air Speed Indicators; AN5766-T3 Magnetic Standby Compasses; AN5770-1 Manifold Pressure Gauges; AN5711-T4B Hyd. Press. Gauges; AN5771-5 Suction Gauges; AN5773-1 Engine Gauge Units; AN5790-6 (1100-77A) Indicators; AN5820-1 Turn & Bank Indicators; AN5822-1 Air Filters (Skinner 27300); AN5825-T6 Rate of Climb Indicators; AN5760-4B Pressure Altimeter.

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University of Minnesota **Minneapolis 14, Minn.**

BOEDY'S ALBUM

R. W. ("Bob") Morrison
Pratt & Whitney Aircraft
Love Field, Dallas, Texas
April 6, 1948

Velta Bowlware
Braniff Airways
Dallas, Texas
April 6, 1948

D. B. ("Dee") Myers
Braniff Airways
Dallas, Texas
April 6, 1948

Betty Lou McNeely
Delta Air Lines
Dallas-Atlanta
April 7, 1948

T. R. ("Tom") Foster
Southern Airways Co.
Hapeville, Georgia
April 8, 1948

J. L. ("Jim") Jackson
U. S. Air Force
at Wood-Ridge, N. J.
April 12, 1948

J. B. ("Jim") Stalnaker
Ryan Aeronautical Corp.
at Wood-Ridge, N. J.
April 13, 1948

M. A. ("Marv") Bennett
U. S. Air Force
at Wood-Ridge, N. J.
April 13, 1948

Paul M. Dixon
U. S. Air Force
at Wood-Ridge, N. J.
April 13, 1948

Robert ("Bob") Haubner
Truco Products, Inc.
at Wood-Ridge, N. J.
April 14, 1948

H. L. ("Harry") Barrett
U. S. Air Force
at WINGS CLUB, New York, N. Y.
April 14, 1948

Owen Brewster
Maine Senator
at WINGS CLUB, New York, N. Y.
April 14, 1948

J. H. ("Jack") Towers
Pan American Airways
New York, N. Y.
April 14, 1948

H. W. ("Bill") Hurt
Air Associates, Inc.
at WINGS CLUB, New York, N. Y.
April 14, 1948

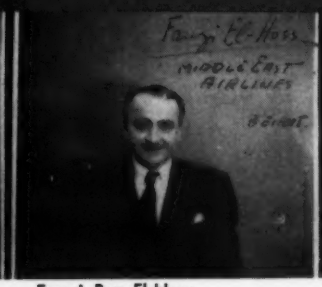
George E. Bevins (OB)
Geo. M. Brewster & Son
at WINGS CLUB, New York, N. Y.
April 14, 1948

Everett H. Schroeder
Pacific Airmotive Co.
at SAE Meeting, New York, N. Y.
April 14, 1948

Candid snapshots from the famous collection of Kenneth J. Boedecker, Wright Aeronautical Corp.

BOEDY'S ALBUM

Harry W. Nevin, Jr.
United Air Lines
at New York, N. Y.
April 14, 1948



Fauzzi Bey El-Hoss
Middle East Airline
at WINGS CLUB, New York, N. Y.
April 23, 1948

Herber Sutton (QB)
Gothic Press, Inc.
at New York, N. Y.
April 26, 1948

Horton D. Fowler (QB)
Continental Can Co.
New York, N. Y.
April 26, 1948

Frank Steinman (QB)
Steinman Flying Service
at QB Dinner, New York, N. Y.
April 26, 1948

R. K. ("Rufe") Ward
U. S. Air Force
Washington, D. C.
April 27, 1948

J. H. ("Jim") Doolittle (QB)
C. A. ("Slim") Lindbergh (QB)
at WAC, Wood-Ridge, N. J.
April 29, 1948

E. C. ("Ed") Sulzman
C. A. ("Slim") Lindbergh
W. B. ("Bill") Birren
April 29, 1948

W. D. ("Bill") Kennedy
J. H. ("Jim") Doolittle (QB)
at WAC, Wood-Ridge, N. J.
April 29, 1948

E. C. ("Ed") Sulzman
J. H. ("Jim") Doolittle (QB)
W. B. ("Bill") Birren
April 29, 1948

R. K. ("Bob") Dunn
Curtiss-Wright Corp.
at Wood-Ridge, N. J.
May 11, 1948

Angie Sprietzer
American Airlines
New York-Boston
May 11, 1948

Lucy Jackson
Northeast Airlines
Boston-New York
May 11, 1948

Barbara Finn
Northeast Airlines
Boston-New York
May 11, 1948

John J. Wilson
U. S. Air Force
Wood-Ridge, N. J.
May 14, 1948

Carl F. Schlub
U. S. Air Force
at Wood-Ridge, N. J.
May 17, 1948

Candid snapshots from the famous collection of Kenneth J. Boedecker, Wright Aeronautical Corp.

Can You Identify this Registry?

AIRCRAFT NATIONALITY MARKS

*	Argentina	LV	* France	F	* Nicaragua	AN
*	Australia	VH	* Greece	SX	* Norway	LN
	Austria	OE	Guatemala	TG	* Pakistan	AP
*	Belgium	OO	Haiti	HH	* Paraguay	ZP
*	Brazil	PP, PT	* Iceland	TF	* Peru	OB
*	Burma	XZ, XY	* India	VT	Poland	SP
*	Canada	CF	* Indonesia	PK	* Portugal	CS, CR
*	Ceylon	CY	Iran	EP	* Philippine Republic	PI
*	Chile	CC	Iraq	YI	* Saudi Arabia	HZ
*	China	B	Ireland	EI, EJ	* Sweden	SE
*	Colombia	HK	* Italy	I	* Switzerland	HB
	Czechoslovakia	OK	Lebanon	LR	Syria	YK
*	Denmark	OY	Liberia	EL	* Thailand	HS
*	Dominican Republic	HI	Luxembourg	LX	Turkey	TC
*	Ecuador	HC	* Mexico	XA, XB, XC	* Union of South Africa	ZS, ZT, ZU
	Egypt	SU	* Netherlands	PH	* United Kingdom	G
	El Salvador	YS	* Netherlands Antilles	PJ	Colonies and Proctectorates	VP, VQ, VR
*	Ethiopia	ET	* Surinam	PZ	* United States	N
*	Finland	OH	* New Zealand	ZK, ZL, ZM	* Uruguay	CX
					* Venezuela	YV

* VICKERS AIRCRAFT HYDRAULICS IN USE

This table includes all nationality marks that have been formally notified to ICAO up to September 30, 1951. Those countries marked with an asterisk have registered commercial aircraft which use Vickers hydraulics. Write to Vickers Incorporated for a 2½" x 4" plastic wallet card which gives you a permanent record of world civil aircraft registration codes.

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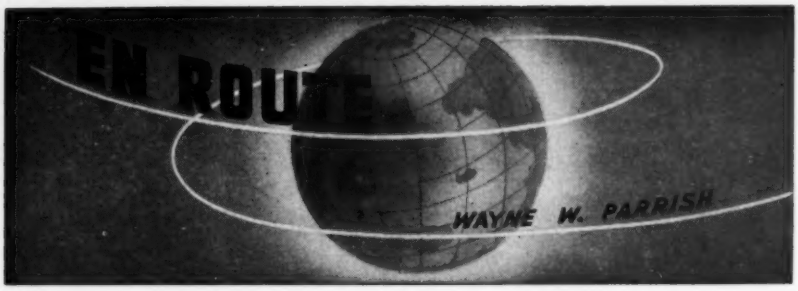
ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921



(No foreign travel this issue. Last time I concluded the series on Yugoslavia. Now I've gone to Venezuela. In the meantime you'll have to read about a trip I made to the West Coast a few weeks ago.)

Crazy Hobby. Without any doubt in the world I've got one of the craziest hobbies anybody ever thought up. My goal is to land on or take off from every airport served by a scheduled carrier in the U. S.

I was making good progress toward this goal and even had prospects of getting to such unlikely places as Minot, N. D., and Douglas, Ariz., until the CAB began dishing out local service routes by the gross. Now I'm not much more than half way through the task of visiting some 550 airports served by certificated carriers.

This hobby has its handicaps and sometimes it gets me into a peck of trouble.

For one thing, whenever I pick a local route instead of the through service I have to argue with reservations and then argue with the gal who sells me my ticket and then argue some more when I check in at the field. Everybody wants to put me on a through flight. The folks at the counters look at me as if to say nobody in his right mind would ever prefer a local, but then I've never pretended to be in my right mind.

✣ ✣ ✣

Like the F. B. I. Some folks are downright suspicious and think I'm inspecting or snooping or surveying or something. Not long ago I had lunch with a top official of a major airline and he finally got around to asking me, in a roundabout way, what in the devil I was up to in insisting on flying his line's local route in a far-away state. It seems that the boys out there had spotted my name as being with AMERICAN AVIATION PUBLICATIONS and duly reported this to the head office much as one reports a suspicious character to the corner cop.

I explained to my friend that all I wanted to do was hop into a series of small airports I'd never seen before and that although I may not be of sound mind the fact remains that I like to fly new routes and see new things and in the final analysis all I've done is believe what the airline advertising says to do—which is to fly.

✣ ✣ ✣

Trouble. But sometimes I get into trouble. I sure fixed myself up royally a few weeks ago. I was in Los Angeles to speak to the Advertising Club out there and to visit aircraft plants and I had a Sunday coming up with nothing especially to do. Some people go to the races, others go to a show, others look at TV, but I had never flown to El Centro and Yuma (ELC and YUM) on Western, so what could be a better busman's holiday than to fly down and back to occupy an otherwise dull Sunday?

My first mistake, I guess, was to mention this bright idea to some folks at Western Air Lines. I never dreamed they would insist on somebody accompanying me. The flight was early Sunday morning when most folks like to sleep late. I had forgotten for the moment that hassel they're having out there over that El Centro-Yuma segment involving court cases, injunctions, Bonanza, Senator McCarran, Southwest Airways, 1500 chambers of commerce, a bale of mayors, three or four states, and everybody else except the adjoining Republic of Mexico. Nobody, just nobody, is speakin' socially to nobody over that case. I sure found that out.

Me, in my blitheful innocence, merely trying to knock off two more new airline stops and a new route in my crazy hobby, and see some new country besides, I have to walk right into that rattlesnake's nest.

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End of the Line. Sunday morning was sunny and springlike. **Tom Murphy**, who is director of governmental affairs and all else he can survey in 13 western states and Canada for Western Air Lines, picked me up at the Hollywood Roosevelt Hotel at the crack of dawn and we grabbed a cup of coffee and boarded the DC-3 for San Diego. After a brief stop there we climbed up over the mountains and down into that fabulous Imperial Valley where irrigation has turned square miles of sand into pure agricultural gold.

The end of the line is Yuma and I gathered up a few hints that this end of the line at Yuma is causing part of the ruckus out there because Yuma is in Arizona and ought to be connected with Phoenix. Anyway, the WAL flight turns around there in 10 or 15 minutes but it's surprising how much devilment can be created in such a short time. Inside the terminal was a delegation to meet me—the newspaper editor and some local citizens who took time off from Sunday morning golf to fill me in on this controversy with the CAB.

A lot of questions were fired at me and I came forth with some statements allowing as how the CAB should not have power to take away permanently certificated points from an airline, else what is the value of a franchise, and I tried to make a few other general points which I thought were innocuous enough. Fact of the matter is, I wasn't up at all on the issues involved in this WAL-SWA-Bonanza deal. I couldn't spell it out to you right now and I'm sure you aren't up on it but just take my word, brother, the shrimpboats come in awfully fast and don't bother to ask why, just get out of the way of that incoming tide.

✣ ✣ ✣

Race Profit. So in a few minutes Murphy and I were back on the DC-3 and returned to El Centro and saw the fair on the outskirts of town and went down to Calexico with **E. V. Meyers**, the personable operator of the Princess Travel Service of El Centro, and then went across the street into Mexicali, that doubtful garden spot of the desert in Mexico, and won twenty bucks hitting three winners on the nose in a dirty bookie joint. (Net profit: $21.00.) Then back to San Diego and Los Angeles. I forgot all about Yuma.

Three or four days later I had gone to San Francisco and Reno and on down to Las Vegas to call on Bonanza Airlines and I was sitting in the comfortable office of **Ed Converse**, Bonanza's president, when I experienced just about the most embarrassing moment of my life.

After discussing Bonanza and airline economics and the weather and other things, Mr. Converse casually picked up a newspaper clipping and started reading. It was from the *Phoenix Republic*, he said, and then came the headline: "Western Air Assured CAB Victory Here." Somewhere in the first fraction of a second after he started reading I could smell those shrimpboats before I could see them.

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Deep Blush. The story was a special dispatch from Yuma to the Phoenix paper and gave me full credit for this prediction of a WAL victory and even went so far as to say that I suggested that the CAB be investigated by a Congressional committee (which I hadn't done). A couple of the things in the story were quoted correctly, but the remainder put me right smack on one side of this controversy.

I guess I blushed about as red as the south end of a new-born babe. I've been in the writing business all my life. Who am I to say I've been misquoted? The writing profession has to stick together! Yet the last thing I ever want to do is get mixed up in an inter-airline controversy—except insofar as broad industry problems are concerned.

Well, I mumbled. **Ed Converse** looked at the ceiling. Then we all laughed and I went into my usual song and dance about how my hobby gets me into strange situations. I like Western and I like **Tom Murphy.** I like Southwest. I like **Converse** and Bonanza. I like **Senator McCarran.** But the next time I start out on a new route junket I'm going to find out in advance if there's a Supreme Court test case coming up anywhere thereabouts. And those newspaper guys can keep on playing golf on Sunday mornings.

Around the World

Comet's First Scheduled Flight

FIRST scheduled passenger flight of the de Havilland Comet, Britain's leading jet transport, will be made on Friday, May 2, by British Overseas Airways Corp. between London and Johannesburg, Africa, a 6,724-mile flight. Scheduled flight time for the trip is 18 hours and 40 minutes, with elapsed time set at 23 hours, 40 minutes. The return trip, which is expected to take 15 minutes longer, will be made on Monday, May 5. The Comet will carry 36 passengers, four operational crew members, and two cabin attendants.

The flight to Johannesburg will be made via Rome, Beirut, Khartoum, Entebbe, and Livingstone. Eventually the Comet will be routed through Cairo, Egypt, instead of Beirut, reducing total distance by 450 miles. One flight per week will be operated throughout May with frequency upped to three weekly in June if planes are available.

Japs Form International Airline

Japan International World Airways has been formed in Japan for operations to the U. S., via Honolulu, and thence to Rio de Janeiro. The Japanese government will not act on the company's application until after the peace treaty is signed at which time necessary applications will also be filed with the U. S. Civil Aeronautics Board and the Brazilian government.

JIWA is said to be negotiating with California Eastern Airways, holder of a CAB letter of registration as an irregular air carrier, which will receive a one-third stock interest and which will provide DC-4's until the airline is able to purchase new equipment. Air Carrier Service Corp., Washington, D. C., is JIWA's U. S. agent.

Principal participant and organizer of JIWA is Osaka Shosen Kaisha, large Japanese steamship company.

KLM Gets $7 Million Loan

KLM Royal Dutch Airlines has been granted a six and one-half year 4⅛% loan of $7 million by the International Bank for Reconstruction and Development to help finance purchase of 23 U. S. planes plus parts. Chase National Bank, New York, is putting up half the money. This marks the first time a private institution has participated in a World Bank loan directly.

The loan comprises about 20% of the $33 million which KLM has scheduled to re-equip its fleet. The 23 planes include nine Lockheed L-1049C's, seven Douglas DC-6B's, one DC-6A, and six Convair 340's.

IATA Meeting Set

Eighth annual general meeting of International Air Transport Association has been set for September 15-19 in Palais du Conseil General, Geneva, Switzerland. Dr. Walter Berchtold, Swissair president, is IATA president-elect, and will take office at the opening session.

TRANSPORT

Negotiations for formation of an internal Japanese airline are being carried on by Pan American World Airways with Japanese transportation interests. It is expected that the company will be jointly owned, with PAA furnishing flying equipment. PAA is also definitely interested in getting into the German airline picture, starting with a domestic line. Company has considered starting with a ground service organization, later furnishing planes for a scheduled operation.

Gregorio Obregon Pochet has been elected presidento of Aerovias Nacionales de Columbia (AVIANCA), succeeding Jorge Restrepo Hoyos, who has retired. Company has reported 1951 net profit of $1,236,000, about $200,000 under 1950.

Necessary legal documents for restarting a German civil airline are now ready, according to Willi Max Rademacher, chairman of the transportation commission of the West German Parliament. Airline would need 30 to 35 planes and capital of 150 million Deutschmarks at the outset, he estimated.

•

MANUFACTURING

Construction work on the Mark II Bristol Brabazon and the second and third Saunders-Roe Princess flying boats will be temporarily shelved to make additional material, manpower, and facilities available for military production. This move, which will save the British government $5.6 million in the current fiscal year, will permit installation of an improved Bristol turboprop Proteus engine in the latter aircraft when development is completed, engines not available at this time.

Neither the Bristol Britannia 175 nor the Vickers Viscount, turboprop-powered aircraft on order by British Overseas Airways Corp. and British European Airways, respectively, are affected by the cut-back in turboprop aircraft development work.

Both the Brabazon II and second and third Saunders-Roe Princess boats were scheduled to be powered by the Mark II Proteus engine, but rescheduling will make available the improved Mark III Proteus. Work on the first Princess flying boat, powered by the earlier Proteus engine, and the prototype Brabazon, powered by conventional piston engines, will continue on schedule.

Negotiations are reported underway for manufacture under license of the Bell 47 helicopter by Marchetti, Italian firm. Aersilta, Italy's oldest helicopter operator, may cooperate in the project by establishing a helicopter pilot training school at Vergiate.

de Havilland Aircraft of Canada, which has been working toward a 30-a-month schedule on the L-20 Beaver planes it is producing for U. S. Air Force, has been asked to cut deliveries to nine-per-month rate. It has already delivered 35 Beavers to AF.

News At Deadline

Profit Figures Filed To Justify Fare Hikes

The Big Four have filed statements with the CAB in justification of their plans to raise passenger fares $1 and to eliminate round-trip and similar discounts (see page 16).

Following is a summary of their statements:

American Airlines: Company's operating cost per revenue ton-mile rose from 39.3c in April, 1951, to 49.9c in February, 1952. AA estimates that rate of profit per revenue ton-mile of business will be 42% lower this year than in 1950 and that this year it will fall several million dollars short of excess-profits tax brackets.

AA submitted actual first-quarter figures showing net profit through mid-March, 1952, of $628,000, compared with $2,915,000 for 1951's first quarter.

Eastern Air Lines: Net operating income per passenger-mile decreased from 1.64c for 1951's first quarter to 0.58c for November, 1951. This resulted from increase in operating expense per passenger-mile from 4.46c to 5.51c. EAL said it faces big increases in salaries, employe benefits, new equipment, fuel, and materials and supplies.

United Air Lines: Although revenues for January and February, 1952, were up 11.4% and 21%, respectively, over same 1951 months, expenses gained 18.6% and 24.3%. Projected to an annual basis, result would be net operating income of $14,906,899 in contrast to $18,526,939 last year. Deliveries of new aircraft will push 1952 depreciation expenses to $14.9 million in contrast to $10.8 million last year.

TWA: Company said its return on investment for five-year period through 1950 was only 2.1% and estimated that proposed fare hike would increase passenger revenues by about $3,219,007. However, TWA said it must increase revenue passenger-miles domestically in 1952 by 25% "just to equal its relative 1951 position." This, it added, "is a tremendous task which will prove impossible should there be any softening of a market which all agree is abnormally high. For the first two weeks of March, we are only 5.1% ahead of the same weeks in 1951."

PAA, TWA Renewals Urged by CAB Examiner

Permanent renewal of basic temporary transatlantic certificates of Pan American World Airways and TWA, slated to expire July 4, 1952, has been recommended by CAB Examiner F. W. Brown.

Other authorizations, including PAA's authority to serve Paris and Rome, and TWA's to serve London and Frankfurt, should be renewed through July 4, 1957, Brown said. He urged denial of European-American Airlines' application for an all-cargo Atlantic certificate on grounds that such service is not needed.

TWA had bid principally for permanent authorizations and modifications which would eliminate PAA from Paris and Rome. PAA generally asked that status quo be maintained but was agreeable to either temporary or permanent renewal.

CAA Asks Ban On C-46 Passenger Flights

Civil Aeronautics Administration last week urged the CAB to rule Curtiss C-46 aircraft out of commercial passenger operations.

At oral argument before CAB on the C-46 weight question, CAA asked that transport category requirements be applied to the C-46 immediately, rather than on Jan. 1, 1954, the date for other aircraft. This application, CAA said, would result in reducing the C-46's maximum gross operating weight to 36,200 lbs. Dent Dalby, counsel for CAA, contended that the C-46 does not have the margin of safety provided by other passenger aircraft.

C-46's are certificated at 48,000 lbs. maximum, but an emergency interim regulation currently limits the maximum to 45,000 lbs. CAA wants 11,800 lbs. cut from the certificated figure, which would preclude use of the plane in passenger service. CAA recommended no changes at this time in C-46's used in cargo operations.

Talks With Mexico Fail

Negotiations between U. S. and Mexico over a possible bilateral air transport agreement have been officially terminated without results, CAB Chairman D. W. Nyrop has advised airline presidents. Conferences broke off in December when U. S. would not agree to grant exclusive non-stop rights between Mexico City and Los Angeles to CMA, Mexican airline.

C. R. Smith Heads Newark Subcommittee

An executive committee headed by C. R. Smith, president of American Airlines, has been established with full authority to act for the full National Air Transport Coordinating Committee, the 19-man group formed to handle airline problems in the New York-Newark area and headed by E. V. Rickenbacker, president of Eastern Air Lines. Executive committee also includes Clarence Sayen, president of Air Line Pilots Association; Austin Tobin, executive director of Port of New York Authority; and Leslie Barnes, Air Transport Association, who will act as executive director.

AOC Elects Inwood

Louis R. Inwood, director of aviation, Kansas City Aviation Department, was elected president of the Airport Operators Council at its recent Los Angeles meeting. Newly-elected first and second vice presidents, respectively, are Adm. John W. Reeves Jr., manager of Los Angeles Department of Airports, and G. D. Albrecht, manager of Memphis Municipal Airport. New directors are A. B. Curry, director of Dade County (Fla.) Port Authority; Fred Glass, director of the Port of New York Authority's Department of Airport Development; George Treadwell, chief engineer, Port of Seattle, Wash.

5-Year 'Copter Service OK'd for New York City

New York Airways has been granted a five-year helicopter authorization by CAB for service generally between any points located within the New York City metropolitan area. Although service was authorized last December, certificate award was withheld at that time pending further showing of financial resources by NYA.

CAB described NYA's area as that embraced by the peripheral points of Trenton, Dover, Peekskill, Bridgeport, Freeport, and Asbury Park. During the full period of authorization, NYA may transport property and mail, but passenger service for the first year may be provided only between New York's major airports.

Republic Sets Up Guided Missiles Group

Republic Aviation Corp. has created a special Guided Missiles Division to handle research and development of "advanced types of transonic and supersonic guided missiles." Its offices, headed by Robert G. Melrose, general manager, will be located at 99 Broadway, New York City.

QUALITY . . . the Most Vital Component of All !

When you have a prescription filled, you naturally assume that it will be "just what the doctor ordered"... its *quality* you take for granted. And you can, because your pharmacist never does. To him, quality and accuracy are virtually a sacred trust. This same feeling prevails at Eclipse-Pioneer. Long ago, Eclipse-Pioneer developed and instituted a quality control system so precise it has become literally the standard by which the "standards" are judged. Every part and process from raw material to finished product is tested and checked with the finest equipment and methods available today. Thus, in specifying the vital instruments and accessories for your planes, you can be certain of the highest quality it is humanly possible to deliver when you call on Eclipse-Pioneer.

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First U.S. Air Mail Flight-1911

Wearing a football helmet and straddling fifteen pounds of souvenir postcards Earl Ovington, back in 1911, made the first official United States Air Mail flight—from Garden City to Mineola, Long Island (N. Y.) He flung the souvenir mail out over the crowds after taking off from the International Aviation Meet—and his postcard drop made history!

● Just as air transportation has made miraculous advancements since the days of the first air mail flight—so has petroleum.

Phillips Petroleum Company has kept pace with the developments of the aviation industry—for airplane engines can only operate within the limits of the fuel that powers them. Today Phillips is one of the nation's largest producers of aviation gasoline for both military and commercial planes. With each new development, Phillips is ready with new fuels to meet the latest demands.

Rely on Phillips when you want dependable aviation products.

AVIATION DIVISION
PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

FORTY YEARS LATER in September, 1951, a twin-pontooned helicopter belonging to the Port Authority of New York made the same trip commemorating the 40th Anniversary of Ovington's first air mail flight. This time the cargo was 1500 air mail letters destined to board a trans-continental airliner at LaGuardia Airport, headed for points west.

Phillips 66

AVIATION PRODUCTS